benefits are single estimates applied across the board to all sites. Problems of water quality are ignored because of insufficient information concerning the relation of water quality to hydrology. Various rates and methods are used to study sensitivity of the design to the discount factor. Results are compared with the final Corps of Engineers design for the basins to show that a very few simulation runs resulted in a design comparable to that derived by standard methods. The relation of flood damages to policy decisions is commented on only in passing, and no new alternatives are considered.

The concluding remarks concerning mechanical details will be of much interest to all who are interested in undertaking simulation studies. Despite the many simplifying assumptions, 80 percent of the memory capacity of the IBM 7094 was used in coding alone. Estimates of computer-run time are given. The interplay of programmer and analyst is described, and the desirability of combining the two skills in one individual is stressed.

As computers become larger and faster, simulation studies will be more common in water-resources design. For those who are on the periphery of the field, or who are involved in simulation for the first time, this book will be helpful. For those teachers who wish to expose their classes to the latest concepts in water-resource system design it will be a good supplementary text.

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A Quick Introduction

The task of a book with a title such as that of **Electronics for Experimenters in Chemistry, Physics and Biology** by Leon F. Phillips (Wiley, New York, 1966. 280 pp., illus. Paper, $3.95) is to provide a balanced account of electronics which is both detailed enough to help the reader see the inner workings of electronics and fast-moving enough so that he does not get lost in these details. The proper balance depends on the outlook and background of the reader, so there is plenty of room for books in this field. Phillips' book is, in his words, "a more or less pocket-sized account," and in reading it I was constantly surprised at how much progress was made on each page and in each section. Many important results are quickly derived by simple calculus, and many good comments of a practical nature are made throughout the book. The order of presentation of topics is not surprising, starting with simple network theory and properties of vacuum tubes and transistors, and progressing through amplifiers, feedback, and noise to a final chapter in which some complex systems are described. There are sections on construction techniques and trouble-shooting which will be valuable to many graduate students. I wish, however, that the author had explicitly mentioned reduction of electric shock hazard when discussing construction techniques.

The fast pace probably precludes learning electronics from this book alone, or even in conjunction with a normal set of lectures of a few hours a week, but there are lists of references which provide the student with a starting place in the literature, and the book should be valuable as a guide in a self-study program.

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New Books

Mathematics, Physical Sciences, and Engineering

Advanced Inorganic Chemistry: A Comprehensive Text. F. Albert Cotton and Geoffrey Wilkinson. Interscience (Wiley), New York, ed. 2, 1966. 1148 pp. Illus. $14.50.

Advances in Electrochemistry and Electrochemical Engineering. vol. 4, *Electrochemistry.* Paul Delahay, Ed. Interscience (Wiley), New York, 1966. 401 pp. Illus. $16. Five papers.

Advances in Electron Metallography. vol. 6. Proceedings of a symposium (Lafayette, Ind.), June 1965. American Soc. for Testing and Materials, Philadelphia, 1966. 137 pp. Illus. Paper, $7; members, $4.90. Ten papers.

Advances in Nuclear Science and Technology. vol. 3. Paul Greebler and Ernest J. Henley, Ed. Academic Press, New York, 1966. 414 pp. Illus. $17.50. Six papers.

Advances in Organometallic Chemistry. vol. 4. F. G. A. Stone and Robert West, Eds. Academic Press, New York, 1966. 432 pp. Illus. $16.50. Six papers.

Algèbres de Lie semi-simples complexes. Jean-Pierre Serre. Benjamin, New York, 1966. Unpaged. Illus. Paper, $3.95; cloth, $8.

Annual Review of Physical Chemistry. vol. 17. H. Eyring, Ed. Annual Reviews, Palo Alto, Calif., 1966. 597 pp. Illus. $8.50. There are 18 papers.

Artificial Intelligence Through Simulated Evolution. Lawrence J. Fogel, Alvin J. Owens, and Michael J. Walsh. Wiley, New York, 1966. 184 pp. Illus. $9.95.

Atlas of Landforms. James L. Scovel, J. C. McCormack, Emmett J. O'Brien, and R. B. Chapman. Wiley, New York, 1966. 168 pp. Illus. Paper, $9.95.

Atomic Collisions: The Theory of Electron-Atom Collisions. Academy of Sciences of the Latvian SSR Institute of Physics, Transactions XIII. V. Ya. Veldre, R. Ya. Damburg, and R. K. Peterkop, Eds. Translated by M. V. Kurepa. M.I.T. Press, Cambridge, Mass., 1966. 142 pp. Illus. $7.50. There are 17 papers.

Beginning Geology. H. H. Read and Janet Watson. Macmillan, London; St. Martin's Press, New York, 1966. 256 pp. Illus. $6.

Beta Decay. C. S. Wu and S. A. Moszkowski. Interscience (Wiley), New York, 1966. 410 pp. Illus. $16. Interscience Monographs and Texts in Physics and Astronomy.

Chain Reactions: An Introduction. F. S. Dainton. Methuen, London; Wiley, New York, ed. 2, 1966. 240 pp. Illus. $5.50.

The Chemistry of the Metallic Elements. David Steele. Pergamon, New York, 1966. 152 pp. Paper, $3.45.

The Chemistry of Metallides. Ivan Ivanovich Kornilov. Translation based on the Russian edition (Moscow, 1964) by J. W. Loweberg. Consultants Bureau, New York, 1966. 168 pp. Illus. Paper, $22.50.

Conformations of Macromolecules. T. M. Birshtein and O. B. Ptitsyn. Translated from the Russian edition by Serge N. Timasheff and Marina J. Timasheff. Interscience (Wiley), New York, 1966. 364 pp. Illus. $14.50. High Polymers Series, vol. 22.

Crystal Symmetry and Physical Properties. S. Bhagavantam. Academic Press, New York, 1966. 240 pp. Illus. $9.50.

Deposition of Thin Films by Sputtering, Symposium (Rochester, N.Y.), June 1966. Consolidated Vacuum Corp., Rochester, N.Y., 1966. 103 pp. Illus. Paper, $4. There are 11 papers.

Design and Construction of Electronic Equipment. George Shiers. Prentice-Hall, Englewood Cliffs, N.J., 1966. 378 pp. Illus. $14. Prentice-Hall Series in Electronic Technology.

The Electromagnetodynamics of Fluids. W. F. Hughes and F. J. Young. Wiley, New York, 1966. 662 pp. Illus. $17.50.

Electron Diffraction: The Nature of Defects in Crystals. Abstracts of papers presented at an international conference (Melbourne, Australia), August 1965. Sponsored by Australian Academy of Science, International Union of Crystallography, and International Union of Pure and Applied Physics. Published for the Australian Academy of Science by Pergamon, New York, 1966. Unpaged. Illus. $14. There are 127 papers.

Electronic Engineering. Charles L. Alley and Kenneth W. Atwood. Wiley, New York, ed. 2, 1966. 757 pp. Illus. $12.50.

The Electronic Theory of Heavily Doped Semiconductors. V. L. Bonch-Bruyevich. Translated from the Russian edition (Moscow, 1965) by Scripta Technica. Robert S. Knox, Translation Ed. Elsevier, New York, 1966. 141 pp. Illus. $7.50.

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NEW BOOKS

(Continued from page 376)

Elementary Practical Organic Chemistry. Pt. 1, *Small Scale Preparations.* Arthur I. Vogel. Wiley, New York, ed. 2, 1966. 455 pp. Illus. $5.75.

Elements of the Theory of Functions. R. S. Guter, L. D. Kudryavtsev, and B. M. Levitan. Translated from the Russian edition (Moscow, 1963) by H. F. Cleaves. I. N. Sneddon, Translation Ed. Pergamon, New York, 1966. 231 pp. Illus. $8.50. International Series of Monographs on Pure and Applied Mathematics, vol. 90.

Engineering Materials Science: Structure and Mechanical Behavior of Solids. Stephen M. Edelglass. Ronald, New York, 1966. 510 pp. Illus. $11.

Essentials of Astronomy. Lloyd Motz and Anneta Duveen. Wadsworth, Belmont, Calif., 1966. 719 pp. Illus. $11.95.

Fundamentals of Abstract Analysis. Andrew M. Gleason. Addison-Wesley, Reading, Mass., 1966. 416 pp. Illus. $13.75.

Geology Illustrated. John S. Shelton. Freeman, San Francisco, Calif., 1966. 446 pp. Illus. $10.

Industrial Gas Cleaning. The principles and practice of the control of gaseous and particulate emissions. W. Strauss. Pergamon, New York, 1966. 491 pp. Illus. $15. International Series of Monographs in Chemical Engineering, vol. 8.

Introduction to Contemporary Mathematics. Sze-Tsen Hu. Holden-Day, San Francisco, 1966. 212 pp. Illus. $7.75. Holden-Day Series in Mathematics.

Introduction to Non-Equilibrium Quantum Statistical Mechanics. Shigeji Fujita. Saunders, Philadelphia, 1966. 177 pp. Illus. $5. Studies in Physics and Chemistry Series.

Introduction to Nonlinear Automatic Control Systems. Rajko Tomović. Translated from the Yugoslavian edition by Paul Pignon. Wiley, New York, 1966. 180 pp. Illus. $7.50.

Introduction to Strong Interactions. A lecture-note volume. David Park. Benjamin, New York, 1966. 267 pp. Illus. Paper, $4.95; cloth, $9.

Introduction to the Mechanics of Solids. Alfred M. Freudenthal. Wiley, New York, 1966. 508 pp. Illus. $14.95.

Low-Grade and Nonconventional Sources of Manganese. David B. Brooks. Published for Resources for the Future. Johns Hopkins Press, Baltimore, 1966. 135 pp. Illus. Paper, $3.50.

Machine Devices and Instrumentation: Mechanical, Electromechanical, Hydraulic, Thermal, Pneumatic, Pyrotechnic, Photoelectric, and Optical. Nicholas P. Chronis, Ed. McGraw-Hill, New York, 1966. 367 pp. Illus. $10. Based on material from *Product Engineering.*

Macromolecular Syntheses. vol. 2. J. R. Elliott Ed. Wiley, New York, 1966. 134 pp. Illus. $6.50. A periodic publication of methods for the preparation of macromolecules. There are 30 papers.

Material Properties and Manufacturing Processes. Joseph Datsko. Wiley, New York, 1966. 559 pp. Illus. $11.95.

Mathematics for Scientists. Thor A. Bak and Jonas Lichtenberg. Benjamin, New York, 1966. 515 pp. Illus. $15.

Mechanical Principles of Polymer Melt

Processing. J. R. A. Pearson. Pergamon, New York, 1966. 160 pp. Illus. $5.50.

Mechanisms of Electron Transfer. Warren L. Reynolds and Rufus W. Lumry. Ronald, New York, 1966. 181 pp. Illus. $9. Modern Concepts in Chemistry.

Numerical Analysis for Computers. John A. N. Lee. Reinhold, New York, 1966. 304 pp. Illus. $10.

Numerical Processes in Differential Equations. Ivo Babuška, Milan Práger, and Emil Vitásek. SNTL-Publishers of Technical Literature, Prague; Interscience (Wiley), New York, 1966. 361 pp. Illus. $9.50.

Organic Compounds with Nitrogen-Nitrogen Bonds. C. G. Overberger, J-P. Anselme, and J. G. Lombardino. Ronald, New York, 1966. 121 pp. Illus. $7. Modern Concepts in Chemistry.

Origins of the Science of Crystals. John G. Burke. Univ. of California Press, Berkeley, 1966. 206 pp. Illus. $6.50.

Particle Waves and Deformation in Crystalline Solids. Edwin R. Fitzgerald. Interscience (Wiley), New York, 1966. 261 pp. Illus. $11.95.

Phaselock Techniques. Floyd M. Gardner. Wiley, New York, 1966. 192 pp. Illus. $8.95. Wiley Monograph Series on Electronic Circuits.

Physical Chemistry. Farrington Daniels and Robert A. Alberty. Wiley, New York, ed. 3, 1966. 781 pp. Illus. $9.95.

Physics. pt. 2. David Halliday and Robert Resnick. Wiley, New York, ed. 2, 1966. 669 pp. Illus. $7.75.

The Physics and Astronomy of the Sun and Stars. John C. Brandt. McGraw-Hill, New York, 1966. 173 pp. Illus. Paper, $2.50. McGraw-Hill Series in Undergraduate Astronomy.

The Physics of Electricity and Magnetism. William Taussig Scott. Wiley, New York, ed. 2, 1966. 721 pp. Illus. $11.95.

The Physiography of Southern Ontario. L. J. Chapman and D. F. Putnam. Published for the Ontario Research Foundation. Univ. of Toronto Press, Toronto, Canada, ed. 2, 1966. 400 pp. Illus. Maps. $7.50.

Potassium Argon Dating. Compiled by O. A. Schaeffer and J. Zähringer. Springer-Verlag, New York, 1966. 246 pp. Illus. $10.60.

Practical Hints on Absorption Spectrometry (Ultra-Violet and Visible). J. R. Edisbury. Hilger and Watts, London, 1966. 278 pp. Illus. 50s.

Programmed Temperature Gas Chromatography. Walter E. Harris and Henry W. Habgood. Wiley, New York, 1966. 323 pp. Illus. $11.

The Radiochemical Manual. B. J. Wilson, Ed. Radiochemical Centre, Amsterdam, ed. 2, 1966. 327 pp. Illus. $10.

Rocks and Minerals. Brian Simpson. Pergamon, New York, 1966. 308 pp. Illus. Paper, $4.50. Commonwealth and International Library of Science.

Semiconductor Counters for Nuclear Radiations. G. Dearnaley and D. C. Northrop. Wiley, New York, ed. 2, 1966. 479 pp. Illus. $12.75.

Solid State Transformations. N. N. Sirota, F. K. Gorskii, and V. M. Varikash, Eds. Translated from the Russian (Minsk, 1964) by Geoffrey D. Archard. Consultants Bureau, New York, 1966. 179 pp. Illus. $22.50.