Despite the broad scope of the book, this is by no means a comprehensive account or an exhaustive review of recent work. The papers look forward rather than at the past; they are thought-provoking, speculative, and often controversial. Although this makes the book a poor reference, it certainly extends its useful life-span as an intellectual stimulant. Indexes are provided both by subject and author; but, since the symposium does not focus on a specific area of research in the usual sense, these will not be particularly useful to most readers. The symposium was held nearly two years ago, but the papers appear to have been brought up to date before publication.

A better starting point for an advanced course or seminar in animal physiology would be hard to find. I have seen no finer introduction to the hardships and rewards encountered in studying function in macroscopic systems.

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Summary and Guide

Elementary Coordination Chemistry. Mark M. Jones. Prentice-Hall, Englewood Cliffs, N.J., 1965. xvi + 473 pp. Illus. $18.60.

Coordination chemistry has undergone a spectacular development in the past 25 years. Powerful new tools and methods of measurement, new preparative techniques, and ever more sophisticated theoretical treatments of chemical bonding have joined forces to provide a truly revolutionary increase in chemical understanding.

Inorganic chemists, chemical physicists, and biochemists have all contributed to this growth of knowledge and have, in turn, been enriched by the cross-fertilization of ideas. It is difficult to imagine a field of chemistry that has not been profoundly affected by the developments in what has come to be known as coordination chemistry.

In the preface of his book, Mark Jones begins by stating that his purpose is "to provide an elementary introduction to that vast and fascinating fund of information which is covered by the term 'coordination chemistry.'" In this goal, the author has succeeded admirably. The subjects covered in the book are best surveyed by listing the 12 chapter titles: "Introduction"; "Nomenclature and types of coordinating agents"; "Some aspects of descriptive coordination chemistry"; "Typical complexes of the various elements"; "The nature of bonding in coordination compounds"; "Some general aspects of the behavior of complexes"; "Determination of the structures of coordination compounds"; "The determination of stability constants"; "Some types of coordination compounds of special interest"; "Some applications of coordination compounds"; "Some metal complexes of biological significance"; and "Thermochemistry of coordination compounds."

As a teaching device for the relative newcomer, this book is to be highly recommended. Here he will find a wealth of well organized and documented information. His curiosity is bound to be aroused by the sustained enthusiasm for the subject which pervades this book. The numerous references provide an excellent guide to the literature, and the exercises given at the end of each chapter are calculated to stimulate thinking along experimental lines.

On the other hand, so vast a fare in the space of about 450 pages inevitably leads to a feeling of frustration on the part of anyone who seeks detailed information. Thus, the coordination chemistry of the actinide elements, for example, is treated in 1½ pages of text.

In summary, the book is a distinct asset to the literature in this field, and it should serve its intended purpose as a useful introductory guide very well.

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New Books

Mathematics, Physical Sciences, and Engineering

Advances in Petroleum Chemistry and Refining. vol. 10. John J. McKetta, Jr., Ed. Interscience (Wiley), New York, 1965. 587 pp. Illus. $27.50. Ten papers: "The composition of petroleum" by R. H. Hunt and M. J. O'Neal, Jr.; "Production and distribution of liquid hydrogen" by C. R. Baker and L. C. Matsch; "Hydrogen conservation in petroleum refining" by G. P. Hinds, Jr.; "Hydrocarbon gasification processes" by G. J. Van den Berg, W. R. Dammers, and L. W. ter Haar; "Modern dewaxing technology" by S. Marple, Jr., and L. J. Landry; "Naphthalene from petroleum" by H. D. Ballard, Jr.; "Nonconventional polymerization of vinyl monomers" by Norman G. Gaylord, David S. Hoffenberg, and Herman F. Mark; "Nitrogen fertilizers" by S. Strelzoff and L. H. Cook; "Nitroparaffin fuels" by R. S. Egly and E. S. Starkman; and "Engine fuel additives" by M. R. Barusch and J. H. Macpherson.

Analytic Functions of Several Complex Variables. Robert C. Gunning and Hugo Rossi. Prentice-Hall, Englewood Cliffs, N.J., 1965. 331 pp. Illus. $12.50. Prentice-Hall Series in Modern Analysis, edited by R. Creighton Buck.

Boundary Value Problems. A. G. Mackie. Hafner, New York, 1965. 266 pp. Illus. $5.50. University Mathematical Monographs, edited by D. E. Rutherford.

A Brief Trigonometry. Robert R. Christian. Blaisdell (Ginn), New York, ed. 2, 1965. 124 pp. Illus. Paper, $1.75. Pure and Applied Sciences Series, Robert E. K. Rourke and Seymour Schuster, Consulting Eds.

Calculus of Several Variables. Casper Goffman. Harper and Row, New York, 1965. 192 pp. Illus. $7. Harper's Series in Modern Mathematics, edited by I. N. Herstein and Gian-Carlo Rota.

Chemical Thermodynamics. A course of study. Frederick T. Wall. Freeman, San Francisco, ed. 2, 1965. 461 pp. Illus. $9.25.

A Collection of Problems on a Course of Mathematical Analysis. G. N. Berman. Translated from the first Russian edition (Moscow, 1947) by D. E. Brown. Ian N. Sneddon, Translation Ed. Pergamon, London; Macmillan, New York, 1965. 602 pp. Illus. $12.50.

Comparative Inorganic Chemistry. B. J. Moody. Elsevier, New York, 1965. 438 pp. Illus. $6.50.

Computer Methods in Solid Mechanics. Joseph J. Gennaro. Macmillan, New York, 1965. 304 pp. Illus. $10.95. Macmillan Series in Civil Engineering, edited by Gene M. Nordby.

Concepts in Physics. Reuben Benumof. Prentice-Hall, Englewood Cliffs, N.J., 1965. 576 pp. Illus. $13.

Design Theory and Data for Electrical Filters. J. K. Skwirzynski. Van Nostrand, Princeton, N.J., 1965. 729 pp. Illus. $29.50.

Descriptive Geometry. E. G. Pare, R. O. Loving, and I. L. Hill. Macmillan, New York, ed. 3, 1965. 393 pp. Illus. $6.50.

Diene Synthesis. A. S. Onishchenko. Translated from the Russian edition (Moscow, 1963) by L. Mandel. Israel Program for Scientific Translations, Jerusalem, 1964; Davey, New York, 1965. 701 pp. Illus. $22.75.

Difference Algebra. Richard M. Cohn. Interscience (Wiley), New York, 1965. 371 pp. $12.95. Interscience Tracts in Pure and Applied Mathematics Series, No. 17, edited by L. Bers, R. Courant, and J. J. Stoker.

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NEW BOOKS

(Continued from page 175)

Dynamics of Rockets and Satellites. G. V. Groves, Ed. North-Holland, Amsterdam, 1965. 325 pp. Illus. $11.20. Chapters contributed by D. S. Carton, H. G. R. Robinson, J. M. J. Kooy, E. Stiefel, R. H. Giese, M. J. Davies, W. M. Kaula, W. G. Hughes, and A. J. Sarnecki.

Eight Lectures on Mathematical Analysis. A. Ya. Khinchin. Translated from the third Russian edition (1948) by Irena Zygmund. Heath, Boston, 1965. 239 pp. Illus. Paper, $4.95.

Electrical Coronas: Their Basic Physical Mechanisms. Leonard B. Loeb. Univ. of California Press, Berkeley, 1965. 714 pp. Illus. $14.

Elements of Cloud Physics. Horace Robert Byers. Univ. of Chicago Press, Chicago, Ill., 1965. 201 pp. Illus. $7.50.

The Elements of Computational Mathematics. S. B. Norkin, Ed. Translated from the Russian edition (Moscow, 1960) by G. J. Tee. A. D. Booth, Translation Ed. Pergamon, London; Macmillan, New York, 1965. 206 pp. Illus. $6.

Elements of Physics. For students of science and engineering. George Shortley and Dudley Williams. Prentice-Hall, Englewood Cliffs, N.J., ed. 4, 1965. 976 pp. Illus. $11.75.

Elevated-Temperature Testing of Metals. A. M. Borzdyka. Translated from the second Russian edition (Moscow, 1962) by Adolph Wald. Israel Program for Scientific Translations, Jerusalem; Davey, New York, 1965. 424 pp. Illus. $16.50.

Excitons. D. L. Dexter and R. S. Knox. Interscience (Wiley), New York, 1965. 147 pp. Illus. $6.50. Interscience Tracts on Physics and Astronomy, edited by R. E. Marshak.

The Feynman Lectures on Physics. vol. 3, *Quantum Mechanics.* Richard P. Feynman, Robert B. Leighton, and Matthew Sands. Addison-Wesley, Reading, Mass., 1965. Unpaged. Illus. $6.75 (exercises, $1).

Field-Effect Transistors. Leonce J. Sevin, Jr. McGraw-Hill, New York, 1965. 140 pp. Illus. $10. Texas Instruments Electronics Series.

The Foundations of Astrodynamics. Archie E. Roy. Macmillan, New York, 1965. 399 pp. Illus. $10.95.

General Chemistry Laboratory Operations. Lawrence E. Conroy and R. Stuart Tobias. Macmillan, New York, 1965. 199 pp. Illus. Paper, $3.50. Concepts of Chemistry Series.

General Relativity and Cosmology. G. C. McVittie. Chapman and Hall, London, 1965. 253 pp. Illus. 50s. International Astrophysics Series, vol. 4, edited by Sir Bernard Lovell and Zdeněk Kopal.

Geochemistry of Sediments: A Brief Survey. Egon T. Degens. Prentice-Hall, Englewood Cliffs, N.J., 1965. 352 pp. Illus. $13.25.

Handbook for Engineers. vol. 1, *Mathematics and Physics.* K. P. Yakovlev, Ed. Translated from the Russian edition (Moscow, 1960) by G. O. Harding. W. A. Sutherland and H. V. Pilling, Translation Eds. Pergamon, London; Macmillan, New York, 1965. 641 pp. Illus. $7.

Introductory Engineering Statistics. Irwin Guttman and S. S. Wilks. Wiley, New York. 1965. 356 pp. Illus. $7.95.

Lectures on Modern Mathematics. vol. 3. T. L. Saaty, Ed. Wiley, New York. 1965. 331 pp. Illus. $11.75. Six papers: "Topics in classical analysis" by Einar Hille; "Geometry" by H. S. M. Coxeter; "Mathematical Logic" by Georg Kreisel; "Some recent advances and current problems in number theory" by Paul Erdös; "On stochastic processes" by Michel Loève; and "Random integrals of differential equations" by J. Kampé de Fériet.

Lie Groups for Pedestrians. Harry J. Lipkin. North-Holland, Amsterdam; Interscience (Wiley), New York, 1965. 172 pp. Illus. $6.

Management of Radioactive Wastes. C. A. Mawson. Van Nostrand, Princeton, N.J., 1965. 206 pp. Illus. $6.95. Van Nostrand Nuclear Science Series, edited by Frank R. Ward.

Matter, Earth, and Sky. George Gamow. Prentice-Hall, Englewood Cliffs, N.J., ed. 2, 1965. 640 pp. Illus. $11.65.

The Measurement of Mechanical Parameters in Machines. N. P. Rayevskii. Translated from the second Russian edition by D. P. Barrett. L. Maunder, Translation Ed. Pergamon, New York, 1965. 230 pp. Illus. $15.

Mechanical Behavior. Wayne Hayden, William G. Moffatt, and John Wulff. Wiley, New York, 1965. 259 pp. Illus. Paper, $2.95. Structure and Properties of Materials series, vol. 3.

Mechanical System Design. W. E. Eder and W. Gosling. Pergamon, New York, 1965. 240 pp. Illus. Paper. Commonwealth and International Library, Applied Mechanics Division, edited by Sir Robert Robinson and Athelstan Spilhaus.

Modern College Algebra. Daniel E. Dupree and Frank L. Harmon. Prentice-Hall, Englewood Cliffs, N.J., 1965. 260 pp. Illus. $5.95.

Molecular Physics in Photosynthesis. Roderick K. Clayton. Blaisdell (Ginn), New York, 1965. 217 pp. Illus. $7.50.

The Nature of Induction Machines. Philip L. Alger. Gordon and Breach, New York, 1965. 530 pp. Illus. $25. Revised edition of *The Nature of Polyphase Induction Machines* (Wiley, 1951).

Nodes and Weights of Quadrature Formulas. Sixteen-place tables. Aleksandr Semenovich Kronrod. Translated from the Russian edition (Moscow, 1964). Consultants Bureau, New York, 1965. 151 pp. $12.50.

Organic Chemistry for General Degree Students. vol. 1, *Fundamental Aliphatic Chemistry*. P. W. G. Smith and A. R. Tatchell. Pergamon, London, 1965. 300 pp. Illus. Paper, 25s. The Commonwealth and International Library series, edited by Sir Robert Robinson and Athelstan Spilhaus.

Photoelectronic Materials and Devices. Simon Larach, Ed. Van Nostrand, Princeton, N.J., 1965. 446 pp. Illus. $12. Contributors are James A. Amick, Richard H. Bube, A. G. Fischer, Simon Larach, E. E. Loebner, G. A. Morton, F. H. Nicoll, Paul Rappaport, A. Rose, M. L. Schultz, R. E. Shrader, W. E. Spicer, A. H. Sommer, and J. J. Wysocki.

Physical Principles of Chemistry.

Robert H. Cole and James S. Coles. Freeman, San Francisco, 1965. 805 pp. Illus. $12.

Principles of Physical Chemistry. Samuel H. Maron and Carl F. Prutton. Macmillan, New York, ed. 4, 1965. 896 pp. Illus. $9.95.

Principles of Physics. F. Bueche. McGraw-Hill, New York, 1965. 680 pp. Illus. $9.75.

Principles of Physical Geology. Arthur Holmes. Ronald, New York, ed. 2, 1965. 1304 pp. Illus. $12.

Probability and Its Engineering Uses. Thornton C. Fry. Van Nostrand, Princeton, N.J., ed. 2, 1965. 478 pp. Illus. $5. Bell Telephone Laboratories Series.

Probability and Statistics. Hans Freudenthal. Elsevier, New York, 1965. 147 pp. Illus. $5.

Progress in Solid State Chemistry. vol. 2. H. Reiss, Ed. Pergamon, London; Macmillan, New York, 1965. 483 pp. Illus. $17.50. Twelve papers: "Metallic diamonds: Pressure-produced metals" by A. J. Darnell and W. F. Libby; "The doping of semiconductors by the injection of energetic ions" by J. O. McCaldin; "Low-energy electron diffraction and surface structural chemistry" by J. J. Lander; "Nucleation in deposition from the vapor" by S. J. Hruska and G. M. Pound; "The structure of a precipitate as determined by the interplay of nucleation, growth, and ageing" by M. Kahlweit; "Defect interactions and precipitation in semiconductors" by R. A. Swalin and R. D. Weltzin; "Nonstoichiometry in chemical compounds" by G. G. Libowitz; "Point defects in ternary ionic crystals" by H. Schmalzried; "Chemical reactions of radiation-produced electrons in ice and in organic solids" by L. Kevan; "The bond description of semiconductors: polycompounds" by F. Hulliger and E. Mooser; "Lattice energies and related topics" by M. F. C. Ladd and W. H. Lee; and "Configurational ordering of defects in solids" by G. W. Lehman and W. G. Gehman.

Rectifier Circuits: Theory and Design. Johannes Schaefer. Wiley, New York, 1965. 367 pp. Illus. $13.50.

The Riemann Hypothesis and Hilbert's Tenth Problem. S. Chowla. Gordon and Breach, New York, 1965. 135 pp. Illus. $6.50. Mathematics and Its Applications Series, edited by Jacob T. Schwartz.

Rodd's Chemistry of Carbon Compounds. vol. 1, pt. C, *Monocarbonyl Derivatives of Aliphatic Hydrocarbons: Their Analogues and Derivatives*. S. Coffey, Ed. Elsevier, New York, ed. 2, 1965. 448 pp. Illus. $27. Four Papers: "Aldehydes and ketones" by J. G. Buchanan, N. A. Hughes, F. J. McQuillin, and G. A. Swan; "Monobasic carboxylic acids" by M. F. Ansell and R. H. Gigg; "Carbon monoxide, isocyanides and fulminic acid" by M. F. Ansell; and "Carbonic acid and its derivatives" by R. Howe.

Skin-Freeze Casting. G. F. Balandin. Translated from the Russian edition (Moscow, 1962) by A. Baruch. D. Alster, Translation Ed. Israel Program for Scientific Translations, Jerusalem, 1964; Davey, New York, 1965. 240 pp. Illus. $11.50.

Slow Neutrons. V. F. Turchin. Translated from the Russian edition (Moscow, 1963). Israel Program for Scientific

Translations, Jerusalem; Davey, New York, 1965. 310 pp. Illus. $16.50.

Soil-Geographical Zoning of the U.S.S.R. (in Relation to the Agricultural Usage of Lands). Translated from the Russian edition (Moscow, 1962) by A. Gourevitch. Israel Program for Scientific Translations, Jerusalem, 1963; Davey, New York, 1965. 492 pp. Maps. $19. An account of research work carried on by Academy of Sciences of the U.S.S.R. Council for the Study of Productive Resources, Dokuchaev Soil Institute.

Space Radio Science. Fourteenth General Assembly of URSI (Tokyo), September 1963. Ken-Ichi Maeda and Samuel Silver, Eds. Elsevier, New York, 1965. 243 pp. Illus. $13.50. Progress in Radio Science Series, vol. 8. Ten papers: "Report of the Space Radio Research Committee" by S. Silver; "Ionospheric research by means of rockets and satellites" by R. E. Bourdeau, J. H. Chapman, and K. Maeda; "Planetary research in the millimetre and infrared region of the spectrum" by H. F. Weaver and S. Silver; "Space communication systems—Results and problems" by E. F. O'Neill; "Data processing and its relation to the communication of deepspace experiments" by S. W. Golomb; Satellite communication devices" by J. R. Pierce; "A commentary on communication satellite devices" by L. D. Jaffe; "Attitude, orbit, and antenna control for a spinning satellite" by H. A. Rosen; "Stabilisation électronique du pinceau d'énergie électromagnétique rayonné par un satellite" by J. C. Simon; and "Long-range communication by orbiting dipole belts" by W. E. Morrow, Jr.

Statics of Granular Media. V. V. Sokolovskii. Translated from the second Russian edition (Moscow, 1960) by J. K. Lusher. A. W. T. Daniel, Translation Ed. Pergamon, London; Macmillan, New York, 1965. 284 pp. Illus. $12.

Steelmaking. The Chipman conference, *Proceedings* (Dedham, Mass.), June 1962. John F. Elliott and T. R. Meadowcroft, Eds. M.I.T. Press, Cambridge, Mass., 1965. 338 pp. Illus. $20. Twenty-four papers presented at the conference to commemorate the career of John Chipman.

Structural Mechanics and Analysis. James Michalos and Edward N. Wilson. Macmillan, New York, 1965. 446 pp. Illus. $10.95. Macmillan Series in Civil Engineering, edited by Gene Nordby.

Sulfuric Acid: Use and Handling. Oscar T. Fasullo. McGraw-Hill, New York, 1965. 344 pp. Illus. $15.

University Chemistry. Bruce H. Mahan. Addison-Wesley, Reading, Mass., 1965. 672 pp. Illus. $8.95.

The Upper Atmosphere: Meteorology and Physics. Richard A. Craig. Academic Press, New York, 1965. 521 pp. Illus. $12.50. International Geophysics Series, edited by J. Van Mieghem.

Vibration. Based on six lectures delivered at the Royal Institution (London), December 1962. R. E. D. Bishop. Cambridge Univ. Press, New York, 1965. 128 pp. Illus. Paper, $1.95; cloth, $5.50.

Wind Waves: Their Generation and Propagation on the Ocean Surface. Blair Kinsman. Prentice-Hall, Englewood Cliffs, N.J., 1965. 700 pp. Illus. $23.35.