

centuated by the failure of two authors to deliver promised manuscripts in time for publication. The editor wisely chose incompleteness in preference to obsolescence, but, despite the omission of the two late chapters, much of the material was clearly written nearly two years prior to the date of publication. Many chapters contain no late-1964 or 1965 references at all.

This volume contains some good chapters and one or two that are excellent. They deserve better company. The editor notes in the preface that his work was carried out "in a period of hardship and calamity." Perhaps under improved circumstances succeeding volumes will be improved.

The ready availability of this book in the laboratories and on the desks of those who work in the field is precluded by its price. It will be largely confined to the shelves of reviewers and scientific libraries. Perhaps not all of the latter will find its acquisition a necessity; it cannot be considered a bargain.

E. H. CORDES

Department of Chemistry,  
Indiana University, Bloomington

## Reflection Measurements

There are all too many spectroscopists—particularly those working in the infrared region—who consider that the only way to record the spectrum of a material is to put it into solution and measure its transmission. For this group, as well as the analytical chemists who have samples that cannot be handled in the conventional manner, and for those interested in reflection measurements in general, **Reflectance Spectroscopy** [Interscience (Wiley), New York, 1966. 306 pp., illus. \$12], by Wesley Wm. Wendlandt and Harry G. Hecht, will prove to be well worth studying. Included are fairly lengthy treatments of the theory of specular and diffuse reflectance, together with chapters on applications and instrumentation, a discussion of internal-reflection spectroscopy, treatments of high-temperature and dynamic-reflectance spectroscopy, descriptions of color-measurement methods, and a section on the integrating sphere. The descriptions of commercially available instrumentation are especially good.

Perhaps because most reflection work has been done in the visible and ultraviolet regions of the spectrum, rela-

tively small portions of the book are devoted to the infrared region. Much of the information pertaining to visible and ultraviolet wavelengths can be extrapolated into the infrared, however.

Since the current trend in infrared analysis is more and more toward the examination of samples *in situ* by specular reflection, internal reflection, and emission techniques, **Reflectance Spectroscopy** will serve as a highly useful introduction to these new methods for the infrared spectroscopist. In addition, it provides a summary of classical reflection procedures for those working in the visible and ultraviolet.

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## New Books

### Mathematics, Physical Sciences, and Engineering

**Advances in Analytical Chemistry and Instrumentation.** vol. 5. Charles N. Reilly and Fred W. McLafferty, Eds. Interscience (Wiley), New York, 1966. 408 pp. Illus. \$14. Six papers: "Determination of molecular weights by ebulliometry" by Clyde A. Glover; "Automation of the analytical process through continuous analysis" by W. J. Blaedel and R. H. Laessig; "The solvent extraction of metal chelates" by George K. Schweitzer and W. Van Willis; "Interpretation of K-edge x-ray absorption spectra of transition metal compounds" by Richard M. Levy and John R. Van Wazer; "Analytical applications of microwave spectroscopy" by David R. Lide, Jr., and "The determination of molecular structure by single-crystal x-ray diffraction methods" by Robert F. Bryan.

**Advances in Astronomy and Astrophysics.** vol. 4. Zdeněk Kopal, Ed. Academic Press, New York, 1966. 358 pp. Illus. \$14. Five papers: "Objective prisms and measurement of radial velocities" by Ch. Fehrenbach; "The figure and gravity field of the moon" by C. L. Goudas; "The relativistic degenerate gas" by A. W. Guess; "Exchange of matter and period changes in close binary systems" by A. Kruszewski; and "The stray bodies in the solar system" pt. 2, "The cometary origin of meteorites" by Ernst J. Öpik.

**Advances in Cryogenic Engineering.** vol. 11. Proceedings of a conference (Houston, Texas), August 1965. K. D. Timmerhaus, Ed. Plenum Press, New York, 1966. 728 pp. Illus. \$19.50. Seventy-six papers on the following topics: Insulation (9 papers); Refrigeration (8 papers); Space Technology (10 papers); Cryogenic Properties (7 papers); Phase Equilibria and Thermodynamics (7 papers); Mechanical Properties (9 papers); Heat Transfer (10 papers); Equipment (6 papers); Superconductivity and Magnets (8 papers) and Invited Papers (2 papers).

**Advances in Inorganic Chemistry and Radiochemistry.** vol. 8. H. J. Emeléus and A. G. Sharpe, Eds. Academic Press, New York, 1966. 375 pp. Illus. \$14.50. Six papers: "Substitution products of the group VIB metal carbonyls" by Gerard R. Dobson, Ingo W. Stolz, and Raymond K. Sheline; "Transition metal cyanides and their complexes" by B. M. Chadwick and A. G. Sharpe; "Perchloric acid" by G. S. Pearson; "Neutron diffraction and its applications in inorganic chemistry" by G. E. Bacon; "Nuclear quadrupole resonance and its application in inorganic chemistry" by Masaji Kubo and Daiyu Nakamura; and "The chemistry of complex aluminohydrides" by E. C. Ashby.

**Aerospace Telemetry.** vol. 2. Harry L. Stiltz, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1966. 271 pp. Illus. \$10.95. Prentice-Hall Space Technology Series. Five papers: "Satellite and space probe telemetry" by Robert W. Rochelle; "FM data systems" by J. H. Crow; "Single sideband FM telemetry" by Walter O. Frost; "Adaptive telemetry—data compression" by Daniel Hochman and Donald R. Weber; "PACM-pulse amplitude/code modulation" by Warren F. Link.

**Analysis of the New Metals: Titanium, Zirconium, Hafnium, Niobium, Tantalum, Tungsten and Their Alloys.** W. T. Elwell and D. F. Wood. Pergamon, New York, 1966. 287 pp. Illus. \$9.50.

**Analytic Geometry.** Murray H. Protter and Charles B. Morrey, Jr. Addison-Wesley, Reading, Mass., 1966. 328 pp. Illus. \$6.75.

**Analytical Instrumentation: A Laboratory Guide for Chemical Analysis.** Galen W. Ewing. Plenum Press, New York, 1966. 171 pp. Illus. \$7.50.

**Annual Review of Astronomy and Astrophysics.** vol. 4. Leo Goldberg, Ed. Annual Reviews, Palo Alto, Calif., 1966. 521 pp. Illus. \$8.50. Fifteen papers: "Abundance determinations from stellar spectra" by R. Cayrel and G. Cayrel de Strobel; "The long-period variable stars" by Józef I. Smak; "Problems of close binary systems that involve transfer of angular momentum" by Su-Shu Huang; "The accuracy of trigonometric parallaxes of stars" by S. Vasilievskis; "Absolute intensity calibrations in radio astronomy" by J. W. Findlay; "Magellanic clouds" by B. J. Bok; "The structure of radio galaxies" by Alan T. Moffet; "Evolution of protostars" by Chushiro Hayashi; "Astronomical measurements in the infrared" by Harold L. Johnson; "Hydrogen molecules in astronomy" by G. B. Field, W. B. Somerville, and K. Dressler; "The polarization of cosmic radio waves" by F. F. Gardner and J. B. Whiteoak; "Magnetic stars" by P. Ledoux and P. Renson; "Pulsation theory" by R. F. Christy; "Superdense stars" by John Archibald Wheeler; and "Spectral classification through photoelectric narrow-band photometry" by Bengt Strömberg.

**Antenna Analysis.** Edward A. Wolff. Wiley, New York, 1966. 532 pp. Illus. \$25.

**Applied Climatology: An Introduction.** John F. Griffiths. Oxford Univ. Press, New York, 1966. 128 pp. Illus. \$6.

**Applied Mechanics for Engineers.** vol.

(Continued on page 160)

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## NEW BOOKS

(Continued from page 143)

1. C. B. Smith. Pergamon, New York, 1966. 242 pp. Illus. Paper, \$4.50. The Commonwealth and International Library.

**Applied Underwater Acoustics.** D. G. Tucker and B. K. Gazey. Pergamon, New York, 1966. 260 pp. Illus. Paper, \$4.50. The Commonwealth and International Library.

**Approximate Analysis of Randomly Excited Nonlinear Controls.** Harold W. Smith. M.I.T. Press, Cambridge, Mass., 1966. 150 pp. Illus. \$7.50.

**Atlas of Planetary Solar Climate.** vol. 5. Clyde J. Bollinger. Bollinger Climatic Research Service, Norman, Okla., 1966. 112 pp. Illus. Paper.

**Atomic Absorption Spectroscopy.** James W. Robinson. Dekker, New York, 1966. 216 pp. Illus. \$9.75.

**Atoms to Andromeda.** S. T. Butler and H. Messel, Eds. Pergamon, New York, 1966. 301 pp. Illus. Paper, \$3.50. The Commonwealth and International Library. Fifteen lectures given at the 1966 Nuclear Research Foundation Summer Science School for High School Students.

**Basic Chemistry: A Programmed Presentation.** Stewart M. Brooks. Mosby, St. Louis, 1966. 145 pp. Illus. Paper, \$3.85.

**Basic Matrix Analysis and Synthesis: With Applications to Electronic Engineering.** G. Zelinger. Pergamon, New York, 1966. 244 pp. Illus. \$7.50.

**Bituminous Materials: Asphalts, Tars, and Pitches.** vol. 3, *Coal Tars and Pitches.* Arnold J. Hoiberg, Ed. Interscience (Wiley), New York, 1966. 603 pp. Illus. \$25. Fifteen papers.

**Book of ASTM Standards: With Related Material.** pt. 9, *Cement; Lime; Gypsum* (512 pp. \$9; members, \$6.30); pt. 16, *Structural Sandwich Constructions; Wood; Adhesives* (828 pp. \$14; members, \$9.80). American Soc. for Testing and Materials, Philadelphia, 1966. Illus.

**Calculus.** pt. 1. Edwin E. Moise. Addison-Wesley, Reading, Mass., 1966. 508 pp. Illus. \$8.95.

**The Challenge of the Computer Utility.** D. F. Parkhill. Addison-Wesley, Reading, Mass., 1966. 219 pp. Illus. \$7.95.

**The Chemical Bond.** J. J. Lagowski. Houghton Mifflin, Boston, 1966. 208 pp. Illus. Paper, \$2.95. Classic Researches in General Chemistry.

**Chemical Data Book.** G. H. Aylward and T. J. V. Findlay, Eds. Wiley, New York, ed. 2, 1966. 96 pp. Illus. Paper, \$2.95.

**Chemical Kinetics in Homogeneous Systems.** Mowbray Ritchie. Wiley, New York, 1966. 123 pp. Illus. Paper, \$2.95. University Chemical Texts.

**Chemistry.** John S. McAnally. Merrill, Columbus, Ohio, 1966. 120 pp. Illus. Paper, \$1.75; cloth, \$3.95. Merrill Physical Science Series.

**The Chemistry of Cellulose and Wood.** N. I. Nikitin. Translated from the Russian edition (Moscow, 1962) by J. Schmorak. Israel Program for Scientific Translations, Jerusalem; Davey, New York, 1966. 703 pp. Illus. \$26.50.

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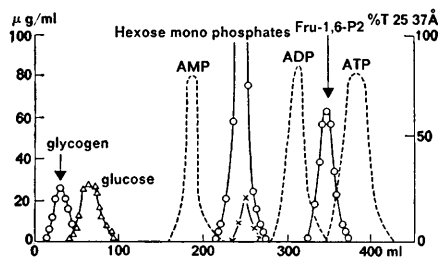
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liam L. Jolly. Prentice-Hall, Englewood Cliffs, N.J., 1966. 159 pp. Illus. Paper, \$2.50; cloth, \$5.50. Foundations of Modern Chemistry Series.

**Circuits, Devices, and Systems.** A first course in electrical engineering. Ralph J. Smith. Wiley, New York, 1966. 790 pp. Illus. \$11.95.

**Classical Mechanics, Quantum Mechanics, Field Theory.** Amnon Katz. Academic Press, New York, 1965. 217 pp. Illus. \$7.50. Pure and Applied Physics Series.

**Coal Carbonization Products.** Donald McNeil. Pergamon, New York, 1966. 171 pp. Illus. Paper, \$2.95. The Commonwealth and International Library.

**Cold Cleaning with Halogenated Solvents.** Prepared by Committee D-26 on Halogenated Organic Solvents. American Soc. for Testing and Materials, Philadelphia, 1966. 37 pp. Paper, \$2.75; members, \$1.95.

**Colloid Chemistry.** A. Sheludko. Translated from the second Russian edition (Moscow, 1960) by Express Translation Service. Elsevier, New York, 1966. 287 pp. Illus. \$14.50.

**Complex Compounds of Uranium.** I. I. Chernyaev, Ed. Translated from the Russian edition (Moscow, 1964) by L. Mandel. M. Govreen and IPST Staff, Translation Ed. Israel Program for Scientific Translations, Jerusalem; Davey, New York, 1966. 534 pp. Illus. \$21.50.

**The Conceptual Development of Quantum Mechanics.** Max Jammer. McGraw-Hill, New York, 1966. 413 pp. Illus. \$10.50. International Series in Pure and Applied Physics.

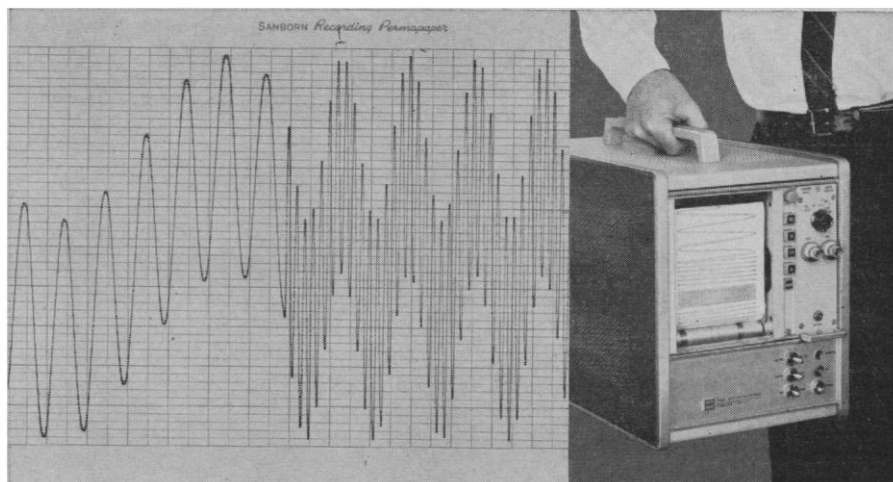
**Copper-Catalytic Reactions.** Ovanes Akopovich Chaltykian. Translated from the Russian edition (Erevan, 1963) by A. Eric Stubbs. Thomas Gray, Translation Ed. Consultants Bureau, New York, 1966. 78 pp. Illus. Paper, \$10.

**Crystal Physics of Interaction Processes.** Warren P. Mason. Academic Press, New York, 1966. 256 pp. Illus. \$14.95.

**Crystallization Processes.** N. N. Sirota, F. K. Gorskii, and V. M. Varikash, Ed. Translated from the Russian edition (Minsk, 1964) by Geoffrey D. Archard. Consultants Bureau, New York, 1966. 179 pp. Illus. Paper, \$22.50. Twenty-eight papers.

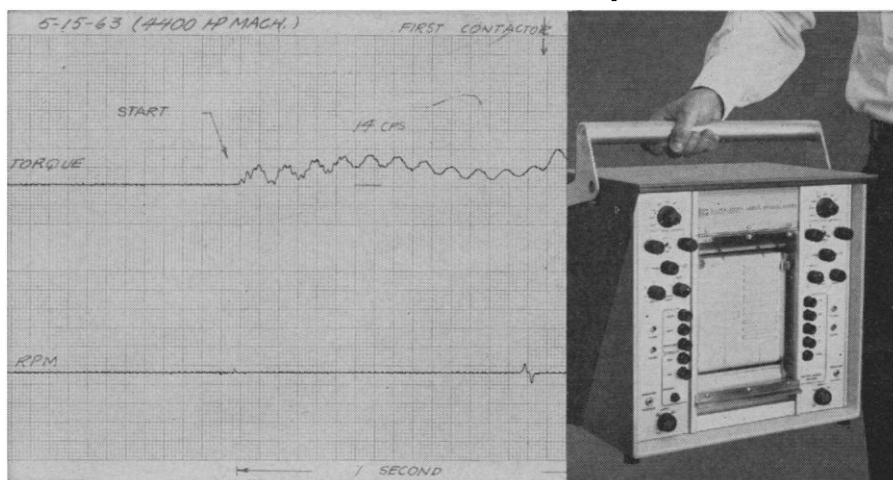
**Deep Circulation, Central North Pacific Ocean: 1961, 1962, 1963.** William D. Barbee. U.S. Department of Commerce, Washington, D.C., 1966 (order from Superintendent of Documents, Washington, D.C.). 112 pp. Illus. \$1.75.

**Developments in Inorganic Nitrogen Chemistry.** vol. 1, Charles B. Coburn, Ed. Elsevier, New York, 1966. 591 pp. Illus. \$32.50. Seven papers: "Bonding in nitrogen compounds" by Michael Green; "The inorganic azides" by A. D. Yoffe; "Developments in the inorganic chemistry of compounds containing the sulphur-nitrogen bond" by Margot Becke-Goehring and Ekkehard Fluck; "Nitrogen ligands" by W. P. Griffith; "Phosphorus-nitrogen compounds (*sans* cyclic phosphoronitrilic compounds) by Morris L. Nielsen; "Nitrogen compounds of boron, aluminum, gallium, indium and thallium" by John K. Ruff; and "Inorganic reactions in liquid ammonia" by G. W. A. Fowles.



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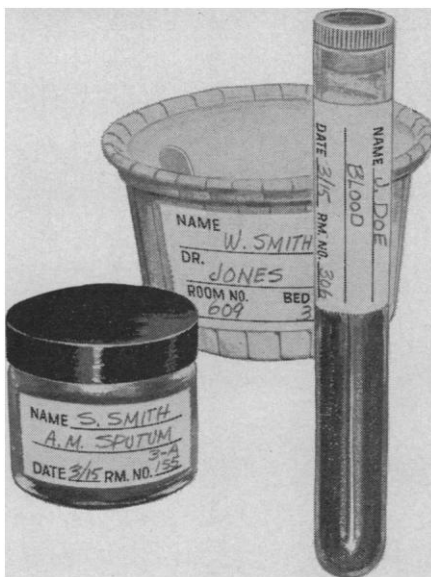
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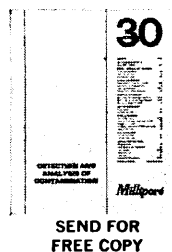
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**Discrete and Continuous Methods in Applied Mathematics.** Jerold C. Mathews and Carl E. Langenhop. Wiley, New York, 1966. 541 pp. Illus. \$10.95.

**Dyeing Fibre Blends: The Processing of Blends, Unions and Mixtures Containing Natural or Man-Made Fibres.** R. C. Cheetham. Van Nostrand, Princeton, N.J., 1966. 387 pp. Illus. \$12.50.

**Einführung in die Theorie des Magnetismus.** Dieter Wagner. Vieweg, Braunschweig, Germany, 1966. 194 pp. Illus. Paper, DM. 22.50.

**Elasto-Hydrodynamic Lubrication: The Fundamentals of Roller and Gear Lubrication.** D. Dowson and G. R. Higginson. Pergamon, New York, 1966. 247 pp. Illus. Paper, \$4.50.

**Electric Machines: Dynamics and Steady State.** George J. Thaler and Milton L. Wilcox. Wiley, New York, 1966. 627 pp. Illus. \$11.95.

**Electrochemistry of Molten and Solid Electrolytes.** vol. 3. A. N. Baraboshkin, Ed. Translated from the Russian edition (1965). Consultants Bureau, New York, 1966. 141 pp. Illus. Paper, \$17.50. Twenty papers.

**Electron Density Profiles in Ionosphere and Exosphere.** Proceedings of the NATO Advanced Study Institute (Finse, Norway), April 1965. Jon Frihagen, Ed. North-Holland, Amsterdam; Interscience (Wiley), New York, 1966. 643 pp. Illus. \$18.75. Sixty-seven papers.

**Electronic Digital Systems.** R. K. Richards. Wiley, New York, 1966. 649 pp. Illus. \$15.

**Electronic Troubleshooting.** A self-instructional programed manual. Staff of Philco Technical Institute. Prentice-Hall, Englewood Cliffs, N.J., 1966. 286 pp. Illus. \$12.50.

**Electrophilic Additions to Unsaturated Systems.** P. B. D. de la Mare and R. Bolton. Elsevier, New York, 1966. 294 pp. Illus. \$14.50. Reaction Mechanisms in Organic Chemistry, vol. 4.

**Elementary Differential Geometry.** Barrett O'Neill. Academic Press, New York, 1966. 421 pp. Illus. \$9.95.

**The Elements of Integration.** Robert G. Bartle. Wiley, New York, 1966. 141 pp. Illus. \$6.95.

**Elements of Organic Chemistry: As Revealed by the Scientific Method.** Alsoph H. Corwin and Maurice M. Bursey. Addison-Wesley, Reading, Mass., 1966. 764 pp. Illus. \$12.50.

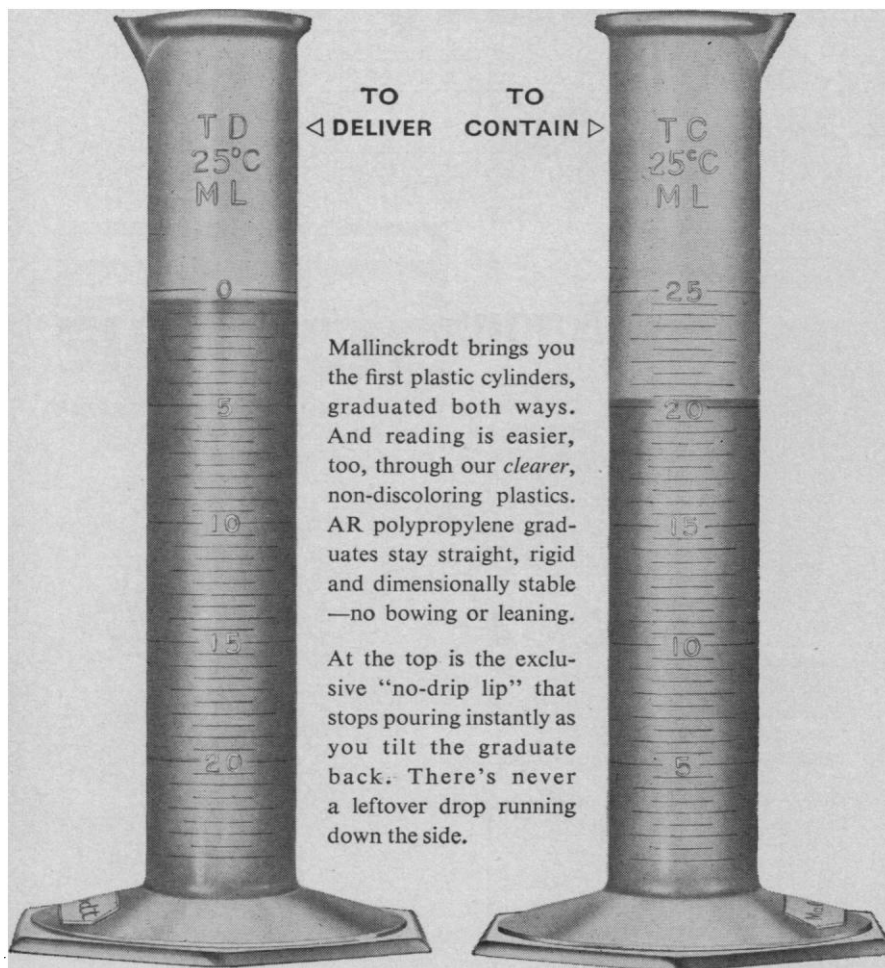
**Elements of Probability and Statistics.** Elmer B. Mode. Prentice-Hall, Englewood Cliffs, N.J., 1966. 368 pp. Illus. \$10.65.

**Encyclopaedic Dictionary of Physics.** Suppl. vol. 1. J. Thewlis, Ed. Pergamon, New York, 1966. 422 pp. Illus. \$20. Approximately 160 articles.

**Encyclopedia of Polymer Science and Technology: Plastics, Resins, Rubbers, Fibers.** vol. 4, *Collagen to Dialysis*. Herman F. Mark, Norman G. Gaylord, and Norbert M. Bikales, Eds. Interscience (Wiley), New York, 1966. 876 pp. Illus. \$50.



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**Feedback Circuit Analysis.** S. S. Hakim. Iliffe, London; Wiley, New York, 1966. 392 pp. Illus. \$15.50.

**A Fortran Introduction to Programming and Computers: Including Fortran IV.** Marvin L. Stein and William D. Munro. Academic Press, New York, 1966. 128 pp. Illus. Paper, \$3.96.

**Functional Analysis.** George Bachman and Lawrence Narici. Academic Press, New York, 1966. 544 pp. Illus. \$14.50. Academic Press Textbooks in Mathematics.

**Geological Data Processing: Using FORTRAN IV.** F. G. Smith. Harper and Row, New York, 1966. 302 pp. Illus. \$14.

**Geology of the Porphyry Copper Deposits: Southwestern North America.** Spencer R. Titley and Carol L. Hicks, Eds. Univ. of Arizona Press, Tucson, 1966. 305 pp. Illus. \$15. Twenty-three papers on the following topics: General Papers Related to Areal Geology, Host Rocks, Alteration, Mineralization, Structure, and Exploration (8 papers); Descriptive Geology (15 papers).

**Groundwater Seepage Rates.** N. A. Ogil'vi and D. I. Fedorovich. Translated from the Russian edition (Moscow, 1964) by N. H. Choksy. Consultants Bureau, New York, 1966. 39 pp. Illus. Paper, \$7.50.

**Group Theory and Its Physical Applications.** Chicago Lectures in Physics, 1964. L. M. Falicov. Univ. of Chicago Press, Chicago, Ill., 1966. 232 pp. Illus. Paper, \$2.

**Grundbegriffe der Kybernetik.** Hans-Joachim Flechtner. Wissenschaftliche Verlag, Stuttgart, Germany, 1966. 435 pp.

**Guide to Design Criteria for Metal Compression Members.** Bruce G. Johnston, Ed. Wiley, New York, ed. 2, 1966. 235 pp. Illus. \$10.

**Heteromorph Ammonoids from the Albian and Cenomanian of Texas and Adjacent Areas.** David L. Clark. Geological Soc. of America, New York, 1965. 107 pp. Illus. \$5.50.

**High-Power Electronics.** vol. 2. P. L. Kapitza and L. A. Wainstein, Eds. Translated from the Russian edition by S. Nikolic and M. Nikolic. J. Reeve, Translation Ed. Pergamon, New York, 1966. 125 pp. Illus. \$8.

**High Resolution Nuclear Magnetic Resonance Spectroscopy.** vol. 2. J. W. Emsley, J. Feeney, and L. H. Sutcliffe. Pergamon, New York, 1966. 542 pp. Illus. \$17.50.

**High-Temperature Chemistry of Silicates and Other Oxide Systems.** Nikita Aleksandrovich Toropov and Valentin Pavlovich Barzakovskii. Translated from the Russian edition (Moscow, 1963) by C. Nigel Turton and Tatiana I. Turton. Consultants Bureau, New York, 1966. 228 pp. Illus. Paper, \$25.

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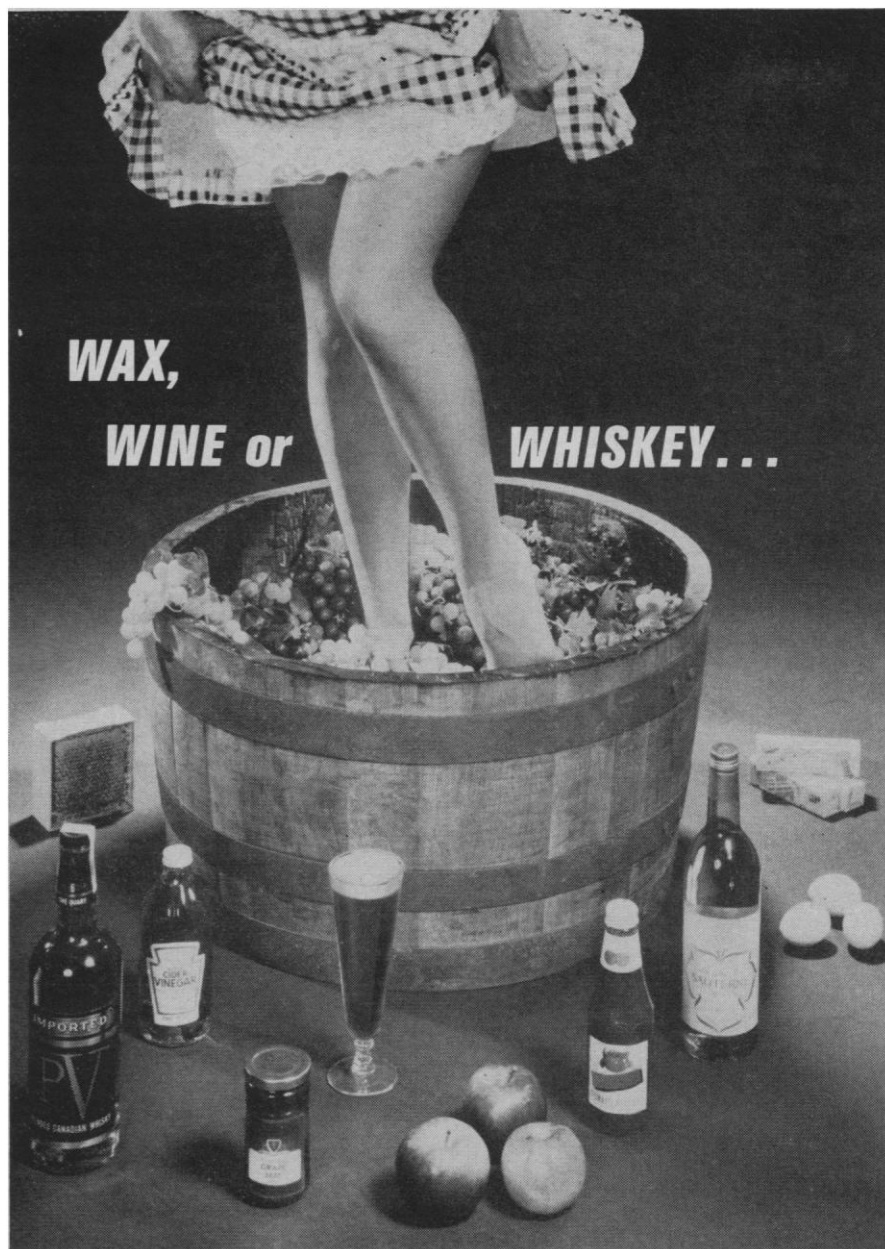
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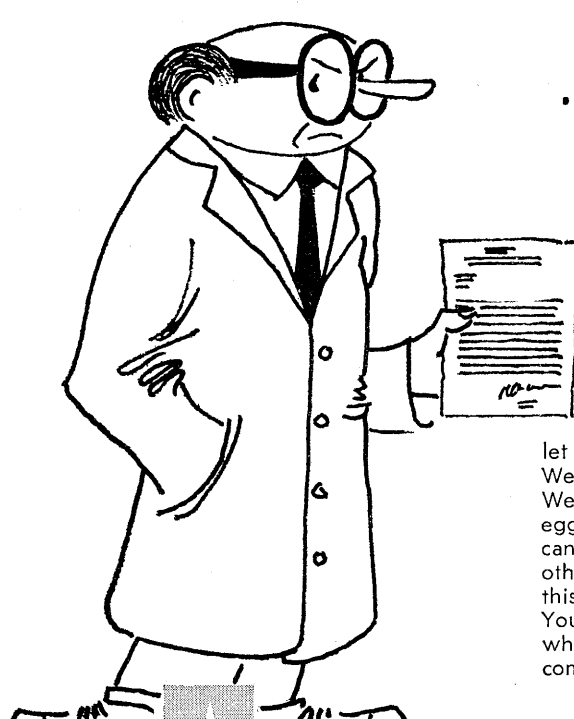
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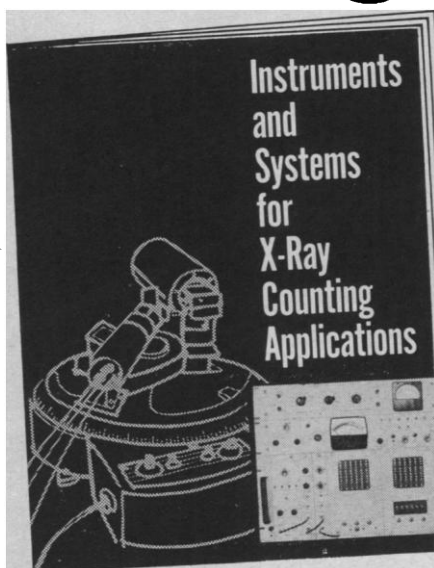
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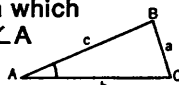
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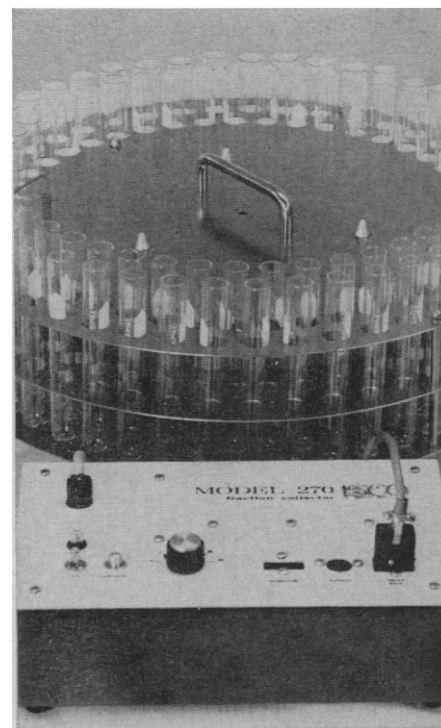
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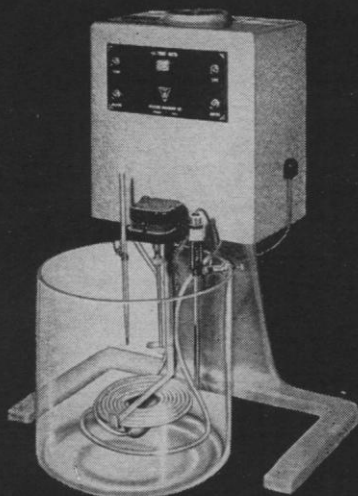
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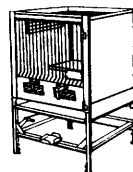
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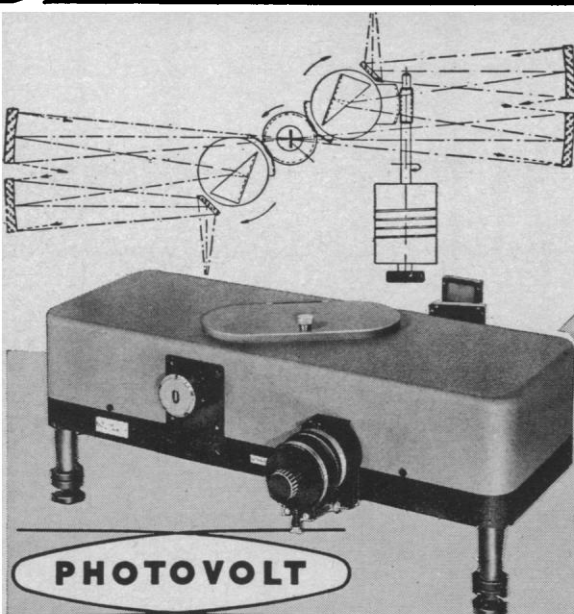
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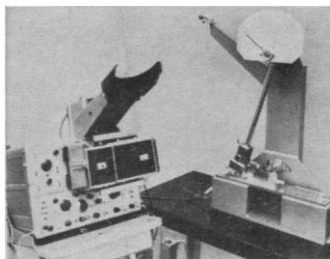
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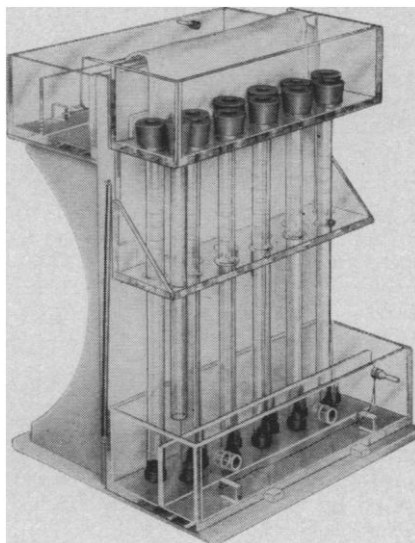
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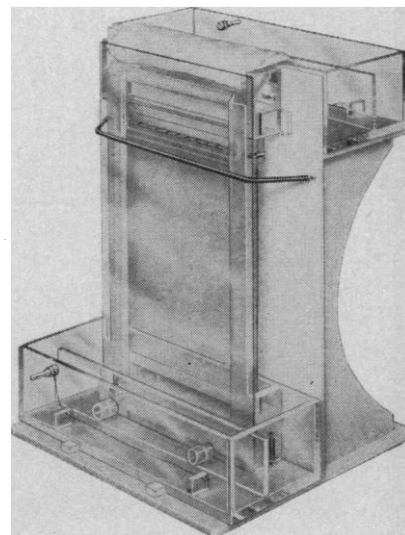
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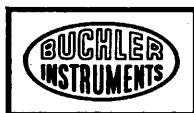
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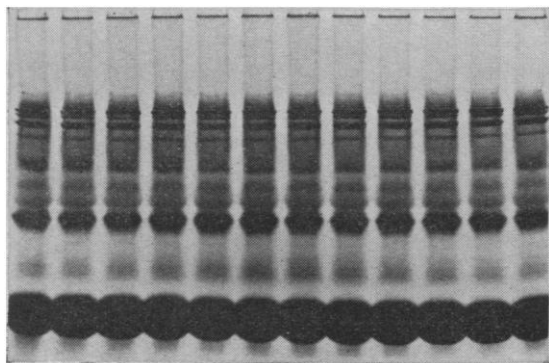
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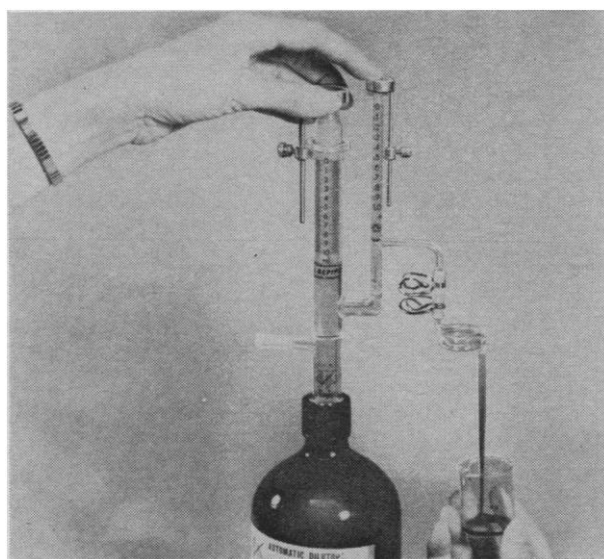
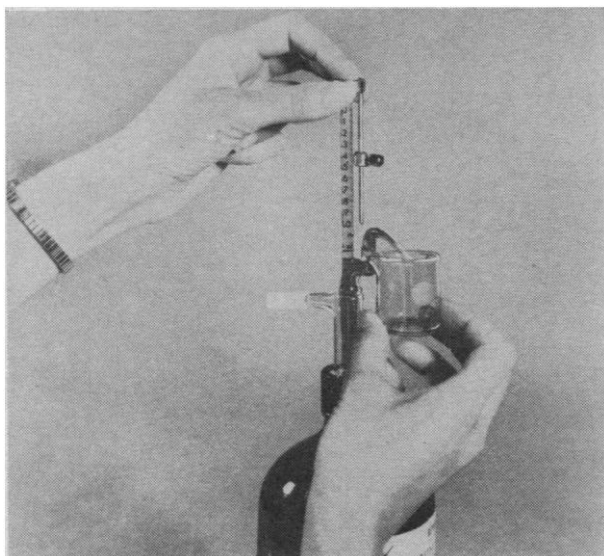
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