agents used in the procedures. Balanced equations are given for each reaction.

The experimental section in general follows a conventional hydrogen sulfide system of analysis. However, titanium has been added to the ammonium sulfide group, lithium hydroxide is used to separate the copper and arsenic subgroups, and strontium is separated from calcium with concentrated nitric acid. The procedures are designed for a " 'large' semimicro scale" in which 1 to 25 milligrams of a constituent are present in 1 milliliter of solution. Following a brief discussion of the steps involved in the separation and detection of the ions of a group or subgroup, the experimental procedures are then presented compactly in tabular form.

In general, the book is very well written. The style is quite readable, and the format and organization are excellent. However, I feel that the student might gain more from some of the illustrative problems if they were solved by reasoning from principles rather than by substituting into previously derived equations. The authors' practice of considering the simple ionic species of an element in solution rather than the appropriate complex ion where this species is known is often misleading. The treatment of the hydrolysis of salts of polyprotic acids, such as the bicarbonate ion, serves only as a very poor first approximation. With regard to the experimental section, some of the procedures appear to give very incomplete separations. The authors, however, do not claim that the separations used are the most sensitive or the most rapid, but only that they "give the most reliable results in the hands of beginning students."

The desirability of another textbook of qualitative analysis based on hydrogen sulfide separations may seem questionable, but the lucid theoretical treatment and the extremely complete reference section make this book a worth-while contribution to the field.

ROY A. WHITEKER
Department of Chemistry,
Massachusetts Institute of Technology

Physics of Fibres. An introductory survey. H. J. Woods. Institute of Physics, London, 1955. 100 pp. Illus. + plates. 30s.

Studies of the structures and properties of fibers are becoming increasingly more important with the rapid development of new fibers and the many modifications of the natural fibers to provide the functional and esthetic characteristics that are demanded of modern textiles. Physicists have embarked only in recent years in the research and development work of the textile industry. The demand for this work, however, is constantly growing, and therefore this little book of 100 pages on the physics of fibers is published at a very opportune time.

The six chapters of the book are concerned with general fiber structures; general physical fiber properties; x-ray investigations; optical properties; elastic properties; and electron microscopy of fibers. In each chapter, the author describes the fundamental techniques for the physical measurements and discusses the importance of the results. The eight electron micrographs included in the last chapter are excellent and typical of natural fibers.

The book is not a compilation of photographs and experimental data. In fact, it does not contain a single table of results; however, values pertinent to the discussion are provided in the text. The author condenses a wealth of information in each chapter and guides the reader to specific references in the event further reading and more details are desired.

In addition to the list of 185 references, a bibliography of technical and nontechnical books is given for each chapter. The book is well written and contains an excellent subject index. It is highly recommended to scientists who are engaged in fiber research as well as to those of other fields who may be interested in a general knowledge of the physics of fibers.

HERBERT F. SCHIEFER
Textiles Section,
National Bureau of Standards

New Books

Techniques Générales du Laboratoire de Physique. vol. 1. J. Surugue. Centre National de la Recherche Scientifique, Paris, 1955. 671 pp. F. 2400.

Life, the Great Adventure. Jean Rostand and Paul Bodin (based on a translation by Alan H. Brodrick). Schribner's, New York, 1955, 1956. 228 pp. $3.50.

Microbiology. General and applied. William B. Sarles, William C. Frazier, Joe B. Wilson, Stanley G. Knight. Harper, New York, ed. 2, 1956. 491 pp. $5.75.

The Gardener's Bug Book. Cynthia Westcott. American Garden Guild and Doubleday, New York, 1956. 579 pp. $7.50.

New Worlds of Modern Science. Leonard Engel, Ed. (reprints from various sources). Dell, New York, 1956. 383 pp. $0.35.

Current Anthropology. A supplement to *Anthropology Today.* William L. Thomas, Jr., Ed. University of Chicago Press, Chicago, Ill., 1956. 377 pp. $5.

Sunken Islands of the Mid-Pacific Mountains. Geological Society of America Memoir 64. Edwin L. Hamilton. Geological Society of America, New York, 1956. 97 pp.

Closed-Circuit and Industrial Television. Edward M. Noll. Macmillan, New York, 1956. 230 pp. Paper, $4.95.

Introduction to Biological Science. A study of the human body and of the world of plants and animals. Clarence W. Young, G. Ledyard Stebbins, Frank G. Brooks (abridgement of *The Human Organism and the World of Life*). Harper, New York, 1956. 555 pp. $4.75.

Engineering in History. Richard S. Kirby, Sidney Withington, Arthur B. Darling, Frederick G. Kilgour. McGraw-Hill, New York, 1956. 530 pp. $8.50.

Miscellaneous Publications

(Inquiry concerning these publications should be addressed, not to Science, *but to the publisher or agency sponsoring the publication.)*

A Geological Reconnaissance of Panama. Occasional Papers, No. XXIII. Robert A. Terry. California Academy of Sciences, San Francisco, 1956. 91 pp.

A Chemical Study of the Peats of Quebec. P.R. No. 306. J. Risi, C. E. Brunette, H. Girard. Quebec Department of Mines, Quebec, Canada, 1955. 45 pp.

Carnegie Institution of Washington Year Book No. 54. 1 July 1954–30 June 1955, with administrative reports through 9 Dec. 1955. Carnegie Institution, Washington, D.C., 1955. 311 pp. Paper, $1; cloth, $1.50.

The Photonuclear Effect and the Complex Potential-Well Nuclear Model. Notas de Física, vol. II, No. 2. J. P. Davidson. *Shell Effect on Photonuclear Reactions.* Notas de Física, vol. II, No. 4. J. Goldemberg and J. Leite Lopes. 3 pp. + tables and charts. *Note on the Non Relativistic Equation for Spin ½ and 1 Particles with Anomalous Magnetic Moment.* Notas de Física, vol. II, No. 5. J. J. Giambiagi. 10 pp. *Relativistic Theory of Spinning Point Particles.* Notas de Física, vol. II, No. 6. J. Tiomno. 20 pp. *The Formation of P^{32} from Atmospheric Argon by Cosmic Rays.* Notas de Física, vol. II, No. 7. L. Marquez and Neyla L. Costa. 8 pp. Centro Brasileiro, de Pesquisas Físicas, Rio de Janeiro, Brazil, 1955.

Nuclear Metallurgy. IMD special report No. 2. Symposium arranged by Nuclear Metallurgy Committee. Benjamin Lustman, chairman. American Institute of Mining and Metallurgical Engineers, New York, 1956. 94 pp. $3.75.

Casting Techniques for Explosives and Other Nonmetallic Materials. Thomas C. Goodwin, Jr. Maurice W. Ayton, Ed. Technical Information Division, Library of Congress, Washington, D.C. (order from Card Division, Library of Congress, Washington 25). 50 pp. $0.45.

Land Acquisition, 1955. Highway Research Board Bull. 113. 83 pp. $1.80. *Design and Testing of Flexible Pavement.* Highway Research Board Bull. 114. 87 pp. $1.65. *Vertical Sand Drains for Stabilization of Embankments.* Highway Research Board Bull. 115. 52 pp. $0.90. *Experimental Concrete Pavements.* Highway Research Board Bull. 116. 71 pp. $1.35. National Academy of Sciences–National Research Council, Washington 25, D.C., 1955, 1956.