published in Great Britain and North America, and a list of references is found at the end of each chapter. In general, Bergey's *Manual of Determinative Bacteriology* is followed for the classification and nomenclature of bacteria. In most cases use is made of the currently favored name of an organism (for example, *Fusiformis necrophorus*). No mention is made of the many other names which have at one time or another been acceptable for the same organism. The inclusion of some of these older names (even parenthetically) might have been helpful in many instances.

In general, these two volumes are complete and authoritative, and each should be in the library of everyone who is seriously interested in animal disease.

T. C. JONES

180 Longwood Avenue,
Boston, Massachusetts

Introduction to Statistical Communication Theory. David Middleton. McGraw-Hill, New York, 1960. 1140 pp. Illus. $25.

At first glance, this is a very impressive volume on a subject which is not adequately treated in textbook form. However, its very size raises the question of the purpose of this book. Surely only a massive course of lectures would require even a quarter of the material contained in this book. For this reason it might appear to be an imposition on the students to require that they purchase a text at this price; however, there are other objections to the use of this volume as a text. Matters of price aside, I find Middleton's book to be quite diffuse and without emphasis on what is, and what is not, important knowledge of the statistical foundations of communication systems analysis. In addition, the notation is often cumbersome and distracting.

As far as subject matter is concerned, the table of contents omits nothing that is relevant to the field; there are chapters on statistical ensembles, spectra and correlation functions, sampling and interpolation, information theory, Gaussian processes, Langevin and Fokker-Plauck equations, thermal noise, rectification of amplitude-modulated waves, optimum filtering, and finally, a large section on decision procedures applied to reception systems. However, length does not necessarily imply complete coverage of all of these subjects. For example, the relatively simple proof that a one-dimensional, stationary Gaussian process will be Markoffian if, and only if, the autocorrelation function is an exponential is left as a problem. The same is true in the case of many other important results. Random walks are discussed, but only enough to whet the reader's appetite. The simpler and shorter discussion of random walks which is given in Feller's book is more illuminating regarding the transition from the discrete random walk to the diffusion equation.

Although the preceding remarks might be regarded as sanguine, I find Middleton's book to be eminently suitable as a reference work for those who are familiar with communication theory. It is a very nearly complete summary of our present knowledge (although some important topics such as the Siegert-Darling theory of linear functionals of random signals are only mentioned) together with a more than adequate bibliography. If the reader can supply his own emphasis, this is a valuable compendium on communication theory.

GEORGE WEISS

Institute for Fluid Dynamics and
Applied Mathematics,
University of Maryland

New Books

General

Gubnitz, Myron B. *Rocketship X-15*. Messner, New York, 1960. 288 pp. $4.95. Story of the experimental aircraft designed to take man higher and faster than ever before.

Harwell, George C. *Technical Communication*. Macmillan, New York, 1960. 342 pp. $3.75. A textbook that is primarily intended for the engineering student; chapters 5, 6, and 7 discuss formal and informal reports and technical articles.

Jacobs, Jake. *Marineland Diver*. Dodd, Mead, New York, 1960. 190 pp. $4.

Johnson, Walter. *1600 Pennsylvania Avenue*. Presidents and the people, 1929–1959. Little, Brown, Boston, 1960. 400 pp. $6.

McGlothlin, William J. *Patterns of Professional Education*. Putnam's, New York, 1960, 316 pp. $6.75.

Marder, Daniel. *The Craft of Technical Writing*. Macmillan, New York, 1960. 414 pp. $5. A discussion of the principles of rhetoric basic to the writing situations encountered by scientists and technical men.

Thomson, Charles A. H., and Frances M. Shattuck. *The 1956 Presidential Campaign*. Brookings Institution, Washington, D.C., 1960. 397 pp. $5.

Mathematics and Physical Sciences

Ajzenberg-Selove, Fay, Ed. *Nuclear Spectroscopy*. Parts A and B. Academic Press, New York, 1960. 1184 pp. Parts A and B, $16 each; part B, prepublication price $14 until 31 August.

Emeléus, H. J., and J. S. Anderson, Eds. *Modern Aspects of Inorganic Chemistry*. Van Nostrand, Princeton, N.J., ed. 3, 1960. 622 pp. $7.75.

Emmett, Paul, H., Ed. *Catalysis*. Oxidation, hydration, dehydration, and cracking catalysts. vol. 7. Reinhold, New York; Chapman and Hall, London, 1960. 383 pp. $13.50. This volume completes the present series on catalysis. The contributors include J. K. Dixon, J. E. Longfield, L. B. Ryland, M. W. Tamele, J. N. Wilson, and M. E. Winfield.

Jacobs, Alan M., Donald E. Kline, Forrest J. Remick. *Basic Principles of Nuclear Science and Reactors*. Van Nostrand, Princeton, N.J., 1960. 270 pp. $6.50. An introduction to the design and use of nuclear reactors and radioisotopes.

Jacobs, Horace, Ed. *Advances in the Astronautical Sciences*. vol. 5. Plenum Press, New York, 1960. 364 pp. $8. This volume, the proceedings of the 2nd western national meeting of the American Astronautical Society (held 4–5 August 1959 in Los Angeles, Calif.), contains 26 reports covering space mechanics, control, and guidance; advanced propulsion and power; astronautical systems and space vehicle design; space communication and instrumentation; and lunar and planetary environment.

Karan, Pradyumna P. *Nepal. A Cultural and Physical Geography*. Univ. of Kentucky Press, Lexington, 1960. 104 pp. $10.

Linhart, J. G. *Plasma Physics*. North-Holland, Amsterdam; Interscience, New York, 1960. 289 pp. $7.

Mendelssohn, K. *Cryophysics*. Interscience, New York. 1960. 191 pp. Paper, $2.50; cloth, $4.50. An account of developments in this field up to the middle of 1959. Intended for advanced undergraduate or beginning graduate students.

Murphy, George M. *Ordinary Differential Equations and Their Solutions*. Van Nostrand, Princeton, N.J., 1960. 460 pp. $8.50.

Obert, Edward F. *Concepts of Thermodynamics*. McGraw-Hill, New York, 1960. 549 pp. $11.

Social Sciences

Gruliow, Leo, Ed. *Current Soviet Policies*. vol. 3, *The Documentary Record of the Extraordinary 21st Communist Party of the Soviet Union*. Columbia Univ. Press, New York, 1960. 243 pp. $6. Contains the record of the Congress as revealed in the government-controlled Soviet publications.

Hook, Sidney, Ed. *Dimensions of Mind*. A symposium. New York Univ. Press, New York, 1960. 294 pp. $5.

Mowrer, O. Hobart. *Learning Theory and Behavior*. Wiley, New York, 1960. 567 pp. $6.95.

Tibbitts, Clark, and Wilma Donahue, Eds. *Aging in Today's Society*. Prentice-Hall, Englewood Cliffs, N.J., 1960. 443 pp. $6. This book is an expansion of *Aging in the Modern World* (Univ. of Michigan Press, Ann Arbor).