

ing fourteen chapters by contributors who are active workers and recognized authorities in the field of treatment, utilization, and disposal of industrial wastes.

In the initial chapter setting forth the general problem, Rudolfs points out that at least half the pollutional load carried by streams is of industrial origin. Three large industries, steel, petroleum, and pulp and paper consume 95% of the water used in manufacturing operations. However, several smaller industries are characterized by wastes that are very high in terms of "population equivalent," which is determined by organic wastes requiring the same purification as that of domestic sewage. In 1949 organic industries producing oxygen-demanding wastes had a population equivalent exceeding 134 million. A very sensible note is sounded by the editor in the statements that "the recovery of by-products from waste is usually unprofitable" and that "industrial waste treatment should be considered as an integral part of production." A broad foundation is laid in the second chapter which discusses stream pollution and self-purification in general terms.

Remaining chapters cover: milk products; canning, freezing, and dehydrating; slaughterhouse and meat packing; fermentation industries; corn starch processes; tanning, fat processing, and laundry soap industries; textile dyeing and finishing; pulp, paper, and paperboard; acids and explosives; steel pickling; metal plating; coal mining and processing; petroleum; radioactive liquids; and miscellaneous materials. Problems incident to liquid radioactive wastes represent a very recent and complex addition to the field.

Although many of the methods and techniques are common to several industries, their applications are quite varied and specialized. Every phase of waste disposal and treatment is covered from the standpoint of physics, chemistry, biology, engineering, and economics. The references at the end of each chapter are complete and recent. The book represents a thorough and comprehensive treatment of a topic of great public interest and importance.

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An Introduction to Statistical Science in Agriculture. D. J. Finney. Copenhagen: Ejnar Munksgaard; New York: Wiley, 1953. 179 pp. Illus. \$3.75.

Dr. Finney's short and leisurely book is a welcome antidote for the statistical indigestion which seems to be experienced by so many otherwise competent people, investigators and students alike. This bilious attitude toward statistics appears to rise among haphazard and empirical users or those exposed to a near-lethal dose of detailed manipulation of formulas and symbols. For those whose refractive index has not yet crystallized, this book can do much to dissolve any smog which may enshroud the noble and truly indispensable outlines of statistical science. Finney is one who shares the notion that statistics is simply quan-

titative reasoning, the prime requisite for converting correct assumptions and suitable observations into a more precise understanding of nature. Incorrect conclusions obtained because of faulty assumptions or inadequate data (or even plain arithmetic mistakes!) are sins of the user rather than the tool he professes to employ.

Finney's book also will be particularly helpful to those seeking to impart the basic principles for good experimental design and statistical analysis of data to pupils having little previous training or experience in this field. The book is also hopefully recommended to those colleagues who, with pardonable pride, declare that statistics are unnecessary for interpreting the results of *their* investigations. Perhaps Finney's definitions of statistical science will pierce the symbol curtain.

Incidentally, readers of *An Introduction to Statistical Science in Agriculture* will find evidence that the logic of statistics had rudimentary roots in (or at least survived!) the earliest English literature.

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Atlas of Medical Mycology. Emma Sadler Moss and Albert Louis McQuown. Baltimore: Williams & Wilkins, 1953. 245 pp. Illus. \$8.00.

This volume is indeed not only an atlas of mycology from the pictorial point of view, but a concise, ready reference medical mycology for the physician, student, scientist, or laboratory worker.

It is printed on excellent quality paper with good photographic reproductions in black and white of actual organisms and well-chosen clinical cases. Each classification is broken down into etiology, definition, laboratory diagnosis, mycology, histology, treatment, and prognosis. Practical aspects of examination, a chapter on immunology, the recognition of contaminants, plus an excellent glossary complete the work.

Most of the mycoses are well covered, but no mention is made of the prolonged use of the antibiotics, e.g., the new mycin drugs to generalized moniliasis. The importance of underlying disease such as diabetes or malnutrition is not discussed in the causation of moniliasis.

Oxgall agar is listed as a medium of choice for the routine cultivation of fungi; however, Sabouraud's glucose agar (or Emmons' modification) is easier to prepare, cheaper, and satisfactory for routine work.

The section on dermatomycoses is not as well outlined as the other chapters. This section would have been easier to read and study if the pictures of the organisms had been kept closer to their text descriptions. *Tinea capitis*, particularly, could have been better handled. *Microsporum* ringworm should have been distinguished from other trichophyton infections. *Favus* should have been treated separately. The scarring alopecias should have been listed by types of causative organisms, and the black dot ringworm should have been mentioned.

Kerion celsi is not mentioned in this book, yet this fungus (and bacterial) disease is prevalent and may be life endangering.

Under formulary the discussion of x-ray therapy is incomplete. Nothing is said about the conventional method of epilation with x-ray as practiced routinely. The authors have mentioned the fact that some consider a second epilation dangerous.

In spite of the aforesaid minor criticisms we know of no better book of its kind written with so thorough and practical understanding of the subject and its application.

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Books Reviewed in THE SCIENTIFIC MONTHLY

July 1953

An Explaining and Pronouncing Dictionary of Scientific and Technical Words. W. E. Flood and Michael West. London-New York: Longmans, Green, 1952. 397 pp. Illus. \$2.25. Reviewed by Herschel T. Manuel.

Introduction to the Theory of Games. J. C. C. McKinsey. New York: McGraw-Hill, 1952. 371 pp. Illus. \$6.50. Reviewed by James R. Gray.

Introduction to the Foundations of Mathematics. Raymond L. Wilder. New York: Wiley, 1952. 305 pp. \$5.75. Reviewed by E. M. Patterson.

Calculus, a Modern Approach. Karl Menger. Chicago: Illinois Institute of Technology, 1952. 255 pp. Reviewed by M. E. Shanks.

An Introduction to Mathematical Thought. E. R. Stabler. Cambridge, Mass.: Addison-Wesley, 1953. 268 pp. \$4.50. Reviewed by D. Borwein.

Possums. Carl G. Hartmann. Austin: Univ. Texas Press, 1952. 174 pp. Illus. \$6.00. Reviewed by Barbara Lawrence.

The Human Senses. Frank A. Geldard. New York: Wiley, 1953. 365 pp. Illus. \$5.00. Reviewed by Lorus J. Milne and Margery J. Milne.

Methods and Principles of Systematic Zoology. Ernst Mayr, E. Gorton Linsley, and Robert L. Usinger. New York-London: McGraw-Hill, 1953. 328 pp. Illus. \$6.00. Reviewed by Joel W. Hedgpeth.

August 1953

Insect Physiology. Kenneth D. Roeder, Ed. New York: Wiley; London: Chapman & Hall, 1953. 1100 pp. Illus. \$15.00. Reviewed by Cornelius B. Philip.

Cellulose, the Chemical That Grows. Williams Haynes. Garden City, N. Y.: Doubleday, 1953. 386 pp. Illus. \$4.00. Reviewed by Mark H. Adams.

Microbiology and Human Progress. Madeleine Parker Grant. New York: Rinehart, 1953. 718 pp. Illus. \$6.75. Reviewed by Eugene D. Weinberg.

Radioisotopes in Industry. John R. Bradford, Ed. New York: Reinhold, 1953. 309 pp. Illus. \$8.00. Reviewed by Robert D. Fischer.

The Founders of Neurology. Webb Haymaker, Ed. Springfield, Ill.: Thomas, 1953. 479 pp. Illus. Reviewed by William R. Amberson.

September 1953

Birds and Mammals of the Sierra-Nevada. Lowell Sumner and Joseph S. Dixon. Berkeley and Los Angeles: Univ. California Press, 1953. 467 pp. Illus. \$7.50. Reviewed by Ernest P. Walker.

The Birds of Mexico. Emmet R. Blake. Chicago, Ill.: Univ. Chicago Press, 1953. 644 pp. Illus. \$6.00. Reviewed by Herbert Friedmann.

Waves and Tides. R. C. H. Russell and D. H. Macmillan. New York: Philosophical Library, 1953. 348 pp. Illus. + plates. \$6.00. Reviewed by Henry Stommel.

Fishery Science: Its Methods and Applications. George A. Rounsefell and W. Harry Everhart. New York: Wiley, 1953. 444 pp. Illus. \$7.50. Reviewed by Joel W. Hedgpeth.

Between the Tides. Philip Street. New York: Philosophical Library, 1953. 175 pp. Illus. + plates \$4.75. Reviewed by Ralph I. Smith.

Archeology of the Eastern United States. James B. Griffin, Ed. Chicago: Univ. Chicago Press, 1952. 392 pp. 205 Figs. \$10.00. Reviewed by William A. Ritchie.

The Moon. George Gamow. New York: Schuman, 1953. 118 pp. Illus. + plates. \$2.50.

A Guide to the Moon. Patrick Moore. New York: Norton, 1953. 255 pp. Illus. + plates. \$3.95. Reviewed by Harlow Shapley.

The Common Sense of Science. J. Bronowski. Cambridge, Mass.: Harvard Univ. Press, 1953. 154 pp. \$2.00. Reviewed by C. A. Lawson.

Readings in Philosophy of Science. Introduction to the foundations and cultural aspects of the sciences. Arranged and edited by Philip P. Wiener. New York: Scribner's, 1953. 645 pp. \$5.50. Reviewed by Jane Oppenheimer.

The Philosophy of Human Nature. George P. Klubertanz. New York: Appleton-Century-Crofts, 1953. 444 pp. \$3.50. Reviewed by David Bidney.

Historical Metrology. A. E. Berriman. New York: Dutton, 1953. 224 pp. Illus. \$3.75. Reviewed by Wilmer Souder.

Boussingault. (Critique of the eminent agronomist of the 19th century, his journey to greater Columbia and his relations with the Liberator and Manuelita Saenz.) Carlos E. Chardon. Ciudad Trujillo, Republica Dominicana: Editora Montalvo, 1953. 109 pp. Reviewed by George A. Llano.

Free and Unequal. The biological basis of individual liberty. Roger J. Williams. Austin: Univ. Texas Press, 1953. 177 pp. Illus. \$3.50. Reviewed by Edmund W. Sinnott.