

only "so far as is necessary for a better understanding of the physical aspect." In Pirenne's beautiful little book, *Vision and the Eye*, a few selected topics in the physiology of vision are discussed in detail. He does not deny that there are conscious sensations but simply does not deal with them.

Written with an easily flowing style, unburdened by mathematics, and illustrated with many excellent drawings, *Vision and the Eye* should be welcome to many "interested but nonspecialist readers." It is concerned with only part of our present knowledge of the function of the eye. Certain important properties of the visual system are explained, with adequate accounts of how existing knowledge of those properties was obtained.

The eye is considered as a complicated set of instruments for detecting radiant energy within a certain spectral range. Its sensitivity is so high that it seems to be limited only by the quantum properties of light. The fluctuation phenomena to be expected near that limit have been studied by the author among others and are well described. The maximum accuracy of the eye in the discrimination of form is high enough for the wave properties of light to play an important role. The physical principles underlying the limits of sensitivity and accuracy of optical instruments in general must, therefore, be applied to the study of the physiology of vision. The structure of the human eye and comparable structure of other creatures whose eyes are more readily available for experiment are described, to provide a foundation on which the application of physical principles can be based.

As W. S. Stiles states in his foreword, many readers will be pleased with "the very clear formulation, wherever possible in quantitative terms, of the basic notions essential to a proper understanding of the working of the eye and, secondly, the avoidance of arguments founded on introspective descriptions of sensations, which are notoriously difficult to interpret correctly."

David L. MacAdam

Eastman Kodak Company

Frontier Fragments

HIGH POLYMER PHYSICS, A SYMPOSIUM. Edited by Howard A. Robinson. Remsen Press, New York City. 1948. \$12.00.

In January of 1946, during one of its first annual meetings, the high polymer division of the American Physical Society held a symposium at Columbia University in New York City. Twenty-three papers of this symposium, covering a variety of topics in the general field of high polymer physics, have now been gathered together in this volume. About two-thirds of the papers had previously been published in the research journals, but one-third have never before been published.

The topics covered include the molecular structure of high polymers, mechanical and visco-elastic properties (including such diverse materials as textile fibers, cork, rubber, and silicone fluids), thermodynamics of solutions, and instrumentation for measuring some of these properties. The papers are all written by active research specialists in the various fields, and consequently carry

authority; although space does not permit listing here the large number of authors, many well known names are included.

In his introduction the editor states that much thought was given to the desirability of printing such a book, and in its support adduces two reasons: that a picture of current American research in this field should be available to those who were isolated by the war, and that any effort that will bring together the artificially separated disciplines of physics and chemistry is worthwhile. Despite these worthy aims, one still wonders. The papers in this volume are not reviews; they are all reports of current research, necessarily specialized and profusely detailed. They give an intimate picture of part of the frontier of our knowledge, but no serious effort is made to cover, even briefly, the territory behind, and even the paths which link the segments of the frontier are but incidentally mentioned. A reader would have to be already well-informed to gain a clear picture of high polymer physics from this book. For such a reader, however, it will most certainly be valuable.

Bruno H. Zimm

University of California

Books Received

A PROFESSIONAL GUIDE FOR JUNIOR ENGINEERS. By William E. Wickenden. 55 pp. Engineers Council for Professional Development, New York, 1949. \$1.00.

THERMODYNAMIC CHARTS FOR COMBUSTION PROCESSES. By H. C. Hottel, G. C. Williams, C. N. Satterfield. Part I, Text, 75 pp. Part II, Charts, 23 pp. John Wiley and Sons, Inc., New York, 1949. Parts I and II, \$2.60 each.

PARTIAL DIFFERENTIAL EQUATIONS IN PHYSICS. By Arnold Sommerfeld. Translated from the German by Ernst G. Straus. 335 pp. Academic Press, Inc., New York, 1949. \$5.80.

HIGHER ALGEBRA FOR THE UNDERGRADUATE. By Marie J. Weiss. 165 pp. John Wiley and Sons, Inc., New York, 1949. \$3.75.

ANNUAL REPORT, 1948, CONFERENCE ON ELECTRICAL INSULATION. 123 pp. National Research Council, Washington, D. C., 1949.

RADIOACTIVE TRACER TECHNIQUES. By George K. Schweitzer and Ira B. Whitney. 241 pp. D. Van Nostrand Company, Inc., New York, 1949. \$3.25.

FIFTH SEMI-ANNUAL REPORT OF THE ATOMIC ENERGY COMMISSION. 213 pp. U. S. Government Printing Office, Washington, D. C., 1949.

PRE-MEDICAL PHYSICAL CHEMISTRY. By F. A. Matsen, Jack Myers, and Norman Hackerman. 344 pp. The Macmillan Company, New York, 1949. \$4.75.

ELEMENTARY MATHEMATICS FROM AN ADVANCED STANDPOINT, VOLUME II. GEOMETRY. By Felix Klein. Translated from the 3rd German Edition by E. R. Hedrick and C. A. Noble. 214 pp. Dover Publications, Inc., New York, 1939. \$2.95.

MATHEMATICAL FOUNDATIONS OF STATISTICAL MECHANICS. By A. I. Khinchin. Translated from the Russian by G. Gamow. First American Edition. 179 pp. Dover Publications, Inc., New York, 1949. \$2.95.

MICRO-WAVES AND WAVE GUIDES. By H. M. Barlow. 122 pp. Dover Publications, Inc., New York, 1949. \$1.95.

INTRODUCTION TO THE THEORY OF FOURIER'S SERIES AND INTEGRALS. Third Revised Edition. By H. S. Carslaw. Dover Publications, Inc., New York, 1930. \$3.95.