

Book Reviews

Soft Magnetic Materials for Telecommunications.

C. E. Richards and A. C. Lynch, Eds. Interscience, New York; Pergamon, London, 1953. 346 pp. Illus. + plates. \$9.

This book is a collection of 35 papers presented at a 3-day conference at the Post Office Engineering Research Station at Dollis Hill, London, in Apr. 1952. The contributors are from England and the Continent, about an equal number from universities, government, and industrial research laboratories. The papers vary widely in scope and are devoted to theoretical discussions of the basic processes of magnetization, investigations to explain observed magnetic phenomena, and descriptions of new commercial materials and processes. The papers do not go so far as to discuss in any detail the atomic structure or atomic moments of magnetic substances.

The conference was organized by the editors of the book, who are to be congratulated on their initiative and on the successful completion of their plan. One recalls the symposia on magnetism held in England by the Institution of Electrical Engineers in Nov. 1949 and by the Physical Society many years earlier, in 1930. It is gratifying to note two points in this connection: the interval between the two last symposia is only about 2 years; the collaboration between universities, industrial laboratories, and government research institutions appears to be excellent. In 1945 Sir Lawrence Bragg stated in a lecture in Manchester:

Perhaps it is right to ask whether this whole field of magnetic materials is not one where pure and applied science should collaborate to put our country in a stronger position than it is at present. . . . I see a field where there may be a fine collaboration between our university laboratories and the industries which need these materials for various purposes.

The kind of conference reported in the present book is good evidence of cooperation and progress.

Two of the newest fields in ferromagnetism are *ferrites and high-frequency effects*. In this symposium there are five papers on the former subject and some discussion of the latter. In the last few years conferences on magnetism held in France and in America devoted larger numbers of their papers to these subjects. It is somewhat surprising to find a limited consideration of them at the conference on telecommunication materials.

The list of authors includes many names well known in the field of ferromagnetism. The principal subjects may be designated briefly as impurities, fine particles and powders, losses, lag, resonance and frequency effects, and magnetostriction. Materials that are discussed include grain-oriented silicon-iron, high permeability iron-nickel alloys, iron-nickel and carbonyl-iron powders, oriented materials with rectangular loops, and ferrites (resonance, pulse response, signal distortion, magnetostriction).

This book should be read, at least in part, by everyone seriously interested in the properties of ferromagnetic materials and in the nature of the phenomena that they exhibit.

R. M. BOZORTH

Bell Telephone Laboratories, Murray Hill, New Jersey

The Biochemistry of the Nucleic Acids.

J. N. Davidson. Wiley, New York and Methuen, London, ed. 2, 1953. viii + 200 pp. Illus. + plates. \$2.25.

A remarkable amount of information about nucleic acids has been incorporated into this small volume, which is a revision and extension of the first edition (1950). The author has maintained his high standards of accuracy, clarity, and wisdom of selection. The rapid advances in our knowledge of the chemistry and biochemistry of nucleic acids during the past few years made it highly desirable that this useful volume be brought up to date.

The most extensive changes have been made in the chapter dealing with chromatographic techniques applied to nucleotide chemistry, and in the chapters dealing with the structure and properties of the polynucleotides and the mechanism of nucleic acid biosynthesis. Major changes have been made in the chapter on the cell nucleus.

In addition to a brief history of the early developments in nucleic-acid chemistry, the book contains chapters on the hydrolysis products of nucleic acids and their isolation by chromatographic procedures, the structure and properties of the polynucleotides, and nucleases and related enzymes. Techniques for studying nucleic acids *in situ* by means of ultraviolet light and by histochemical methods are discussed. The section on chemical methods for estimating nucleic acids has been brought up to date. These are followed by chapters on the cell nucleus and on the metabolism and the biosynthesis of the nucleic acids, including the most recent work using tracer techniques. The book concludes with a chapter on the biological activity of nucleic acid and a chapter on the nucleic acids in microorganisms. The only change from the first edition in the arrangement of material is that the bibliographic references now appear at the end of each chapter instead of gathered together at the end of the book. A total of 646 citations appear.

This book will undoubtedly be useful to workers in the nucleic-acid and nucleoprotein field, and it can be recommended to biochemists who are specializing in other fields, but who must also remain abreast of developments in the nucleic-acid fields. It will also be of great value to teachers of biochemistry and to biologists who wish to become familiar with the chemistry of the nucleic acids.

JOHN R. TOTTER

Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee