

genome function, accessory cell functions in oogenesis, gene activity in the oocyte nucleus (synthesis of ribosomal and of informational RNA), and cytoplasmic DNA.

In Part 4, "Immediacy of Gene Control and the Regulation of Gene Activity", the following subjects are finally dealt with: very long-lived gene products, moderately long-lived informational RNA and rapidly decaying template RNA, rapidity of variations in gene activity in differentiated cells, bacterial repression-derepression systems, and gene regulation systems in differentiated cells. Some hypotheses are finally examined on the nature of genomic regulation in differentiated cells.

The book is illustrated by numerous diagrams, photomicrographs, radioautographs, etc., and completed by a 600-items-rich bibliography, and by author and subject indexes.

Biochimie Métabolique - Volume 2

Energétique Cellulaire. Biosynthèses

(Metabolic Biochemistry - Volume 2: The Cell Energetics. Biosyntheses)

By Pierre Louisot (Lyon). Simep Editions - Lyon 1969. Paperback: 21×27 cm; VIII+238 pages, including a large number of tables and illustrations. Price not indicated.

The book is made up of two main parts, one dealing with the cell energetics, the other with the main biosyntheses.

In the first part, cell energetics, the following subjects are examined: Krebs cycle, respiratory chain, and oxidative phosphorylations. In the second part, biosyntheses, the main biosynthetic processes are reviewed, with respect to the three classes: glucides, lipids and proteins.

The biosynthesis of proteins, including a review of regulative processes, covers such subjects as DNA: its role, its duplication, and its functional expression, i.e., mRNA;

ribosomes and polysomes; tRNA and activation of aminoacids; the actual biosynthesis of a polypeptide chain; as well as the genetic code, the processes of enzyme adaptation, induction and repression, and the notions of structural and regulatory genes, and of repressor vs. operator and operon.

The book is completed by a final section on the biosynthesis of heterocyclic compounds (purines, pyrimidines, and porphyrins), and by an appendix on the application of isotopic methods in metabolic biochemistry.

A clear and concise style and the largely successful editorial presentation, typical of the Simep manuals, contribute in making this a very valuable book. Although its many subdivisions make it rather easy to locate any subject, the addition of a subject and author index would have no doubt increased the book's value.

The Ribosome

By A. S. Spirin, L. P. Gavrilova (Moscow). Volume 4 in the series, "Molecular Biology, Biochemistry, and Biophysics", edited by A. Kleinzeller (Philadelphia), G. F. Springer (Evanston), and H. G. Wittmann (Berlin). Springer Verlag, Berlin-Heidelberg-New York 1969. Bound volume: 17×25 cm; X+161 pages; 7 tables and 26 illustrations. Chapter references and subject index. Price: DM 54 (US \$ 14.90).

This monograph provides a formulation of a generalized representation of the structure and function of ribosomes, on the basis of an analysis of modern trends in the field. It was mainly aimed to summarize the extremely scattered experimental data presently available, thus making at least some of the concepts outlined serve as a stimulus for further research, although no attempt was made to cite all the literature on the subject.

After a general introduction, reviewing such basic processes as protein biosynthesis; coding, storage and replication, and transfer

of information; involvement of aminoacids in protein biosynthesis; and ribosomal synthesis of proteins, two main parts follow, respectively dealing with structure and function of the ribosome.

In Part 1, physical and chemical properties of the ribosomes, ribosomal RNA and proteins, and structural transformations of ribosomes are dealt with. In Part 2, the following subjects are reviewed: components of the protein-synthetizing system, their association with ribosomes, and the stages of translation. An appendix is added on the mechanism of action of certain antibiotics, such as puromycin, chloromycin, tetracyclines, streptomycin, etc. An effort was made, throughout the book, to concentrate on the structure and function of the individual ribosomal unit: hence the use of the singular in the title.

Clear and well illustrated, this book will be valuable to geneticists and biochemists.

Microbial Ribonucleases

By F. Egami and K. Nakamura (Tokyo). Volume 6 in the series, "Molecular Biology, Biochemistry, and Biosynthesis", edited by A. Kleinzeller (Philadelphia), G. F. Springer (Evanston), and H. G. Wittmann (Berlin). Springer Verlag, Berlin-Heidelberg-New York 1969. Bound volume: 17×25 cm; IX+90 pages; 25 tables, 7 charts, and 5 figures. References and subject index. Price: DM 28 (US \$ 7.00).

The chemical and biological aspects of RNA-degrading enzymes in microorganisms are reviewed in this monograph, under the following main headings: classification of enzymes attacking RNA, distribution of RNases in microorganisms, chemical studies on microbial RNases (*Aspergillus oryzae*, *Streptomyces* and *Actinomyces*, *Ustilago*, *Neurospora crassa*, *Azotobacter agilis*, *Escherichia coli*, *Asper-*

gillus saitoi, *Bacillus subtilis*, etc.), and physiological role of RNA-degrading enzymes in microorganisms (both of intracellular and extracellular enzymes).

Optical Rotatory Dispersion of Proteins and Other Macromolecules

By B. Jirgensons (Houston). Volume 5 in the series, "Molecular Biology, Biochemistry, and Biophysics", edited by A. Kleinzeller (Philadelphia), G. F. Springer (Evanston), and H. G. Wittmann (Berlin). Springer Verlag, Berlin-Heidelberg-New York 1969. Bound volume: 17×25 cm; XI+166 pages; 18 tables and 65 illustrations. References and subject index. Price: DM 46 (US \$ 12.70).

Among the numerous applications of physical methods to the study of the structure of biological macromolecules, a great role has been successfully played by optical rotatory dispersion in solving various structural problems, especially of proteins.

This monograph introduces the reader to the use and application of spectrophotometric methods in molecular biology. The following main subjects are dealt with: structure of proteins, optical activity, and rotatory dispersion (including terms and definitions, theoretical considerations, the Drude and Moffit equations, Cotton effects, etc.); polarimeters and spectrophotometers, and the measurement of optical activity and optical rotatory dispersion; optical rotation of aminoacids, peptides, and proteins, and the optical rotatory dispersion of polyaminoacids and proteins; Cotton effects of synthetic polyaminoacids, and with respect to conformation of proteins (helical and nonhelical); optical rotatory dispersion of structural proteins, of nucleoproteins and histones, and of glyco- and lipoproteins.

The book is completed by a large and updated list of references and a detailed subject index.