

Bacterial Plasmids

G. G. Meynell

The author shows how different types of plasmid were first discovered and discusses the physical structure of their chromosomes, their manner of replication and how they act to bring about conjugation, and other processes they determine.

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The Biochemical Genetics of Man

edited by **D. J. H. Brock**
and **O. Mayo**

Department of Human Genetics
University of Edinburgh
Scotland

October 1972, approx. 700 pp.,
£9.80

This book deals with both the more conventional subjects of biochemical genetics, such as inborn errors of metabolism and protein polymorphism, and other aspects of the molecular variation of man, such as blood groups, leucocyte antigens, haemoglobin diseases, immunoglobulinopathies and disorders of coagulation. The role of polymorphism in evolution, and future directions in as yet unsolved Mendelian diseases, are also treated.

This is the first book to attempt a comprehensive cover of both the principles and facts of the biochemical genetics of man and will be an important textbook for research workers in human genetics, haematology, immunology and biochemistry.

Contents Genetic basis of variation. Normal variation. Pathological variation. Author index. Subject index.

Experimental Botany: An International Series of Monographs

Consulting editors: *J. F. Sutcliffe* and *P. Mahlberg*

Volume 5

Oenothera: Cytogenetics and Evolution

Ralph E. Cleland

November 1972, approx. 390 pp.,
£7.00

Research on *Oenothera* has contributed much to our understanding of heredity: this volume summarizes in chronological order the processes by which present knowledge has been attained and is the first to bring together work on the genetics and evolution of the plant. It will be the definitive treatment of the subject, of value to all biologists, especially those concerned with cytology, evolution, systematics and genetics.

Contents Genetical Behaviour of *Oenothera*. Physical Basis of the Genetical Peculiarities of *Oenothera*. Special Aspects of *Oenothera* Cytogenetics. Evolutionary Considerations. General summary. Appendices. Bibliography. Index.

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Volume 23

Functional Units in Protein Biosynthesis

edited by R. A. Cox
National Institute for Medical Research
Mill Hill, London, England

and A. A. Hadjiolov
Biochemical Research Laboratory
Bulgarian Academy of Sciences
Sofia, Bulgaria

July 1972, xii + 432 pp., £7.00

This volume contains the papers presented at the Symposium 'Functional Units in Protein Biosynthesis' held in Varna, Bulgaria, in September 1971. These papers give an up to date account of the main concepts and experimental results generated in the last few years in the important field of protein biosynthesis. They cover the principal approaches used recently in elucidating the mechanisms of this process in prokaryotes and eukaryotes: structural integration of the ribosomes, recognition mechanisms in the activation of amino acids, interactions of the active constituents of the protein-synthesizing apparatus during initiation, elongation, and termination of the polypeptide chain, genetics and formation of ribosomes, and their interaction with messenger RNA.

Summarizing the results in many important fields of research on protein biosynthesis, it is essential reading for all those concerned with protein biosynthesis in the fields of biochemistry, biology, microbiology and genetics.

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Macromolecules involved in protein synthesis

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Ribosomal proteins from prokaryotes.

Isolation and properties of proteins from animal ribosomes.

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The interaction of 30S ribosomal proteins with 16S RNA and RNA fragments.

Molecular interaction between ribosomal components.

Recent studies on the structure and function of 5S RNA.

Activation of amino acids and transfer RNA

Recognition of transfer ribonucleic acids by aminoacyl tRNA synthetases.

Specificity in the reactions of aminoacyl tRNA synthetases.

Multiplicity of the functionally active forms of aminoacyl tRNA synthetases.

Modified components of tRNA: their possible role in the process of differentiation.

Integration and function of the protein synthesizing apparatus

Structural studies on rat liver and chicken embryo ribosomes.

Experiments on ribosomal structure and function. Association between ribosomal subparticles and its functional significance.

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Initiation factors of protein synthesis and the control of messenger RNA translation.

Fate of initiation factors during aminoacid starvation in *Escherichia coli*.

Isolation and properties of the presumed initiation site region of EMC RNA.

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Interrelationships between polypeptide chain elongation factors and ribosomes.

Ribosomal transformations during protein synthesis. Localization of active centres in the 50S ribosome subunit.

Genetics and biosynthesis of ribosomes

Ribosomal protein genes in bacteria.

Ribosomal RNA genes in bacteria.

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Electron microscopy of active genes.

Polyribosome metabolism in *Escherichia coli*.

Properties of the ribosomal RNA precursor

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