complications of diabetes, newer agents for the treatment of arthritis, mechanisms of action of glucocorticosteroids, and pharmacological regulation of serum lipoproteins.

Topics in Biology has a general review of various enzyme classes and selected examples of enzyme inhibitors. This is followed by a more detailed look at two classes of enzymes: β-lactamases and proteolytic enzymes. The section is rounded off by timely reviews of iron chelation therapy and peptide conformation. In addition to the usual review on Reactions of Interest, the final section, Topics in Chemistry, contains a useful and interesting chapter on asymmetric synthesis. There is a chapter that deals with newer methods and applications of quantitative structure–activity relationships in drug design and another on the stereochemistry of drug–nucleic acid interactions. Scattered throughout this volume are chapters on drug metabolism and a general review followed by reviews on the molecular aspects of, and enantioselectivity in, drug metabolism.

The more than 50 contributors to this issue of Annual Reports have put together an excellent volume which is certain to be of value to medicinal chemists, pharmacologists, and researchers in related fields.

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Genetics of Industrial Microorganisms: Proceedings of the Third International Symposium. Edited by O. K. SEBEK and A. I. LASKIN. American Society of Microbiology, 1913 I St., N.W., Washington, DC 20006. 1979. 283 pp. 15 × 23 cm. Price $12.00.

A symposium on the genetics of industrial microorganisms held June 4–9, 1978, at the University of Wisconsin, Madison, was attended by approximately 500 university and industrial scientists interested in the genetics and biochemistry of existing and potential fermentation products such as antibiotics, amino acids, enzymes, alcohol, and hormones. University scientists recognized for excellent studies in processes basic to fermentation product development—mutation, selection, recombination, regulation, gene cloning—presented lectures, as did industrial scientists recognized for applications of these processes. Those lectures have been condensed into the articles appearing in this book.

In general, the papers reflect recent trends in applied microbiology. Most articles emphasize previously unpublished work, work not yet published at the time of the symposium, or work published just prior to the symposium. A few are well-referenced reviews of recent findings. For example, genetic crosses to improve processes and to find new antibiotics were illustrated by a striking example of the protoplast fusion technique applied to the breeding of fungi for cephalosporin production, presented by C. Ball and P. F. Hamlyn. An equally noteworthy example was the use of interspecific recombination *via* natural conjugation in *Streptomyces* to produce new "hybrid" anthracycline antibiotics, written by W. F. Fleck.

An emphasis on nitrosoguanidine as a mutagen in many strain programs is reflected in a paper by E. Cerdá-Olmedo and P. Ruis-Vásquez. That article succinctly outlines how the peculiarities of nitrosoguanidine action on DNA *in vivo* can be employed to obtain more efficient use of this mutagen. A paper on yeast protoplast transformation with hybrid yeast plasmids is representative of significant academic and industrial efforts to develop useful cloning systems in organisms other than *Escherichia coli*. This paper and other sections of the book illustrate the extent to which basic and applied research in microbiology have meshed. A paper by H. J. Treichler *et al.* on the role of sulfur metabolism in cephalosporin and penicillin biosynthesis illustrates how knowledge of a biosynthetic pathway and analyses of mutants altered in that pathway and its regulation are leading to more directed and more effective means of improving fermentation processes.

The papers by K. F. Chater and M. Okanishi provide an excellent review of plasmid genetics in *Streptomycetes* and of plasmid roles in antibiotic production. This active research area has become more important now that *Streptomycete* protoplasts have been transformed with plasmid DNA, bringing a cloning system in these industrial bacteria closer to reality. This and other key developments were emphasized in the symposium's keynote address by D. A. Hopwood. The Hopwood paper presents an excellent overview of trends to be expected in the application of genetics to industrial fermentations. The articles by N. D. Lomovskaya *et al.* and by K. F. Chater demonstrate an increasing interest in developing transduction in industrial bacteria and their possible use as cloning vectors. Articles by Y. Aharonowitz, B. M. Pogell, and J. F. Martin *et al.* on metabolic regulations in industrial microorganisms likewise show an expanding interest in the basic mechanisms that regulate antibiotic synthesis. Recombinant DNA experiments for the production of mammalian hormones, which have been repeated recently, are not included in this book, but there is a useful discussion of government regulation of recombinant DNA experiments.

The book should be read by all industrial scientists looking for new fermentation products and/or improved strains for producing existing products. Genetic engineering has increased the interest of industrial managers in basic genetic studies. The quest for new challenging problems has led more university microbiologists, biochemists, and geneticists to look with keener interest at organisms traditionally used only in industry. These individuals also will benefit by adding *Genetics of Industrial Microorganisms* to their personal library. The editors, O. K. Sebek and A. I. Laskin, are to be commended for expediting an early publication of this volume, thereby increasing its value as a current reference work in this rapidly progressing field. The American Society for Microbiology is to be commended for offering the volume at a price that makes it available to the interested graduate student.

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Microbiology—1979. Edited by DAVID SCHLESSINGER. American Society for Microbiology, Washington, D.C. 365 pp. Price $22.00.

This volume contains an introductory note by the editor and then is divided into seven topical sections, with each section written by one or more authors. The sectional divisions are as follows:

I Microbial Membranes with an introduction followed by subsections of articles on Lipids (four articles)
Membranes and Membrane Proteins (five articles)
Transport and Energetics (seven articles)
II Mechanisms of Microbial Virulence (Introduction and 30 articles)
III Biochemical Genetics of Pathogenicity (six articles)
IV Antibiotic-Associated Colitis (Introduction and five articles)
V Resistant Gram-Positive Cocci (five articles)
VI Mutasynthesis of Antibiotics (five articles)
VII Ontogeny of the Immune System (five articles)

These articles were written by 134 authors, and each article in the various section divisions is complete with literature citations. The volume contains an author index and a complete subject index for easy reference.

This volume, containing many well-written articles under the topical divisions, would make a worthy addition to the reference library of any scientist in microbiological research.

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