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Book Reviews

Annual Reports on Fermentation Process. Volume 1. Edited by David Perlman. Academic Press, New York, N.Y. 1977. xi + 386 pp. 16 × 25 cm. $19.50.

This volume, the first in a new series edited by David Perlman, aims at a "critical account of significant developments published during the past 2 to 3 years concerning fermentation processes". In spite of this stated "goal" the volume includes several broad (and useful) chapters which would be well suited to a textbook, together with a second group which is devoted to quite specific subjects (chosen possibly by the availability of authors). The sections vary greatly, with the authors supposedly being asked to answer the question "what are the *major developments* in the field published recently". This question is answered well in some chapters (e.g., genetics and β-lactams) and virtually ignored in others (e.g., aeration and macrolides) where an encyclolpedic coverage and/or an undifferentiated listing of nearly all recently published literature is given.

The more general chapters of the volume include the following: a fine comprehensive and useful survey of genetic studies and approaches recently employed with industrial strains of microorganisms used for the production of antibiotics as well as other chemical and pharmaceutical products (Elander, Chang, and Vaughn); a brief section on culture maintenence which will at least serve as a useful guide to the literature (Perlman and Kikuchi); a thorough section on the complex problem of suitable (cost, availability, etc.) substrates for industrial-scale fermentations (Ratledge) together with another on the economic status of fermentation processes (Nyiri and Charles); an extremely detailed treatment of aeration (Tsao and Lee); and brief surveys of continuous fermentation (Dawson) and computer use in connection with industrial fermentations (Dobry and Jost). The specific treatments include the following: single-cell protein (Laskin); enzymes of industrial interest (Aunstrup); immobilized cells (Abbott) and enzymes (Bernath, Venkatasubramanian, and Vieth); microbial transformation (Sebek and Kieslich); aminoglycoside (Nara); and β-lactam (Gorman and Huber) and macrolide antibiotics.

Published rapidly by a photo-offset process, this book will serve a useful purpose for many medicinal chemists and students. The general topics are excellent for students and others wishing knowledge of fermentation processes. The specific sections compete with many other review publications (Annual Reports in Medicinal Chemistry, etc.), and their interest to both students and research workers will be variable.

Northwestern University Medical and Dental Schools **John W. Corcoran**

Polymeric Drugs. Edited by L. Guy Donaruma and Otto Vogl. Academic Press, New York, N.Y. 1978. xii + 397 pp. 16 × 23 cm. $19.50.

"Polymeric Drugs" is the collected papers presented at the International Symposium on Polymeric Drugs, 173rd National Meeting of the American Chemical Society, March 20-25, 1977. It adds interesting and informative material to the rapidly accumulating literature dealing with biomedically useful polymers. The book opens with a general discussion of the benefits of polymeric drug delivery systems by Alejandro Zaffaroni and Pieter Bonsen of Alza Corp. who illustrate these benefits with three examples, two of which are the Ocusert and Progestasert (both Alza devices) and both of which use an inert polymer to control diffusion of the nonpolymeric drugs to the target organs.

However, the remainder of the book does not address this use of polymers; there is no discussion of systems which use either biodegradable or nonbiodegradable inert polymers either in reservoir or matrix devices. This is a rather surprising omission, as the editors have chosen a rather broad definition of the term drug: "... any compond, substance, or composition which when applied upon or introduced into a living system elicits a physiological response".

"Polymeric Drugs" does impress the reader with the breadth of its coverage, including papers on synthesis and structure–activity relationships, and a variety of specific applications including, but not limited to, UV absorbers, food additives, chemotherapy of microbial infections, antithrombogenic polymers, and interferon inducers.

The lack of certain emphases is surprising; very little attention is given to blood–tissue reactions to these materials or to the relation of biocompatibility to polymer structure and properties of polymeric excipients.

Finally, it is difficult to find either a specific thrust of the collection or organization of the material. All articles but one deal with human applications; the exception deals with a herbicide. It can be argued that this falls within the editors' definition of a drug, and, indeed, it does, but it hardly does justice to the agricultural/environmental applications of controlled delivery technology.

The order of the 14 papers following the introductory paper appears to be somewhat random. The material falls broadly into three convenient categories: structure-activity relationships (five papers), synthesis (three papers), and applications (six papers). Even though there is necessarily some overlapping of these categories, the editors have neglected an opportunity to present the reader with a more satisfying arrangement.

Dynatech Corporation **Joseph D. Gresser**
D. L. Wise

Saturated Heterocyclic Chemistry. Volume 5. Specialist Periodical Reports. By G. Pattenden, Senior Reporter. The Chemical Society, Burlington House, London. 1978. ix + 314 pp. 13.5 × 21.5 cm. $52.00.

A guide to the literature, "Saturated Heterocyclic Chemistry", Volume 5, is organized as the previous volumes, and the 1975 coverage is extensive. This final volume of the series retains the quality, excellent reporting, and concise review characteristic of Volumes 1-4 and is very useful to the medicinal chemist. The series will be missed.

Texas College of Osteopathic Medicine/ North Texas State University Health Sciences Center **Gloria G. Lyle**