

## Book Reviews

**Amphetamines and Related Compounds.** Edited by E. COSTA and S. GARATTINI. Raven Press, New York, N. Y. 1970. xiii + 962 pp. 17 × 24 cm. \$28.50.

Amphetamine was synthesized by Edeleanou in 1887 but its sympathomimetic and CNS motor activities did not become known until 45 years later when Gordon Alles studied its pharmacology as a molecular simplification of ephedrine. Nabhauer resolved it and made it possible to locate virtually all the activity (except, perhaps, in parkinsonism) in the *denantiomer*. Since then amphetamine has become a major drug, firmly established as a CNS stimulant, an anorectic, and vasoconstrictor agent. It has become the prototype drug for such activities, and thousands of congeners and analogs have been prepared and tested, and some of them have become important drugs in their own right. Structure-activity relationships have been recognized before, and have been based on various parameters. The introductory chapters of the present symposium volume (Mario Negri Institute, Milan, 1968) sum up neatly these relationships from a medicinal-chemical and pharmacologic viewpoint. Metabolism as a factor in amphetamine activity has loomed large ever since the discovery of these drugs, since steric hindrance to oxidative enzymes is one of their main well-recognized characteristics. These concepts have been refined and expanded and are given a thorough discussion here. The mechanism of action of the amphetamines which affects catecholamine biosynthesis, storage, release, and turnover, is allotted 160 pages. Effects of amphetamines on the biochemical causations of behavior, cardiovascular changes, food intake, lipid metabolism, and experimental studies on the CNS are dealt with broadly. This is followed by clinical studies on sleep and memory in the presence of these drugs, and on the use of amphetamines in the treatment of hyperkinetic children.

This symposium took place appropriately when the amphetamines, and especially some methoxylated congeners, moved to the forefront of drugs massively abused for their psychotomimetic potential. Three reviews of this topic conclude the book. Unfortunately, they are the weakest part of the symposium, full of errors and uncertainties. This is especially noticeable after the presentation of the other chapters by world authorities in their fields of work. To name just a few of the 121 contributors, apart from the editors: J. H. Biel, A. H. Beckett, J. R. Boissier, J. Axelrod, B. B. Brodie, A. Pletscher, F. Sulser, L. Stein, J. N. Eble, J. H. Cavanaugh, P. Mantegazza, L. Lasagna—these and many others have cooperated to produce a book that should become a standard on the subject. Print and typography are exceptionally good. The indexes are more than adequate.

UNIVERSITY OF VIRGINIA  
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

**Disinfection.** Edited by MELVIN A. BENARDE with 19 contributors. Marcel Dekker, Inc., New York, N. Y. 1970. xv + 466 pp. 16 × 23 cm. \$24.50.

Through the elucidation of major facets of microbial nutrition and metabolism, the mechanisms by which disinfectants exert their action have become understood much better. Quantitative methods have been successfully initiated by mathematical models which make predictions possible about the thermal death of infectious organisms. Spores have been characterized chemically and physically and factors involved in their resistance to and destruction by sporicides have been studied widely. Similarly, the effects of chemical disinfectants on viruses are now more amenable to investigation than they were not so long ago. The book under review devotes about one-third of its pages to a critical discussion of all these problems. The remainder concerns disinfection and sterilization procedures in hospitals in the U.S.A., Japan, U.S.S.R., and in the dairy, seafood, food processing, and beverage industries. Thus the reader who looks for guidance in practical problems of disinfection will have the opportunity to

learn the theoretical and research background of his activities. The book is to be welcomed as a teaching device in methodology and a strong educational contribution to the field.

UNIVERSITY OF VIRGINIA  
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

**The History of Penicillin Production.** Edited by A. L. ELDER. American Institute of Chemical Engineers, New York, N. Y. vi + 100 pp. 21.7 × 28 cm. Paperback.

As more and more "simple" therapeutic problems have been solved, and only the "complicated" ones remain to be done, pessimism has settled over the medicinal research community. The fundamental premises for many urgent new programs are clouded, pertinent tests that may carry over to clinical conditions are unknown, and there are no reliable prototype drugs which can be set up as standards. Those who feel their research aims rest on such shaky foundations, should read the account of the development of penicillin from its incredibly uncertain beginnings to a \$200 millions a year commodity. This story teaches us how one can gamble against overwhelming odds provided that the right individuals with a mixture of real ingenuity and serendipity are made to cooperate on the task. Dr. Elder who coordinated the early development was ridiculed by some of his closest scientific friends for becoming associated with what obviously was to be a flop—namely, the commercial production of penicillin by fermentation. The extraction of the acid-unstable penicillins—then still believed to be one compound—from the acid-buffered thick mush baffled the best chemists and engineers the war-time crash effort could muster. The art of mixing and stirring, then in its infancy, had to conjure up a new high-speed propeller stirrer, the "Queen Mary," to break up the hopeless emulsions and effect separation. In every step unorthodox new methods had to be sought and put into practice until, after 5 years, the goal had been achieved.

The little book at hand tells the penicillin story from Fleming's accidental discovery to the synthesis of the many penicillins from 6-aminopenicillanic acid. Its readable, narrative form conveys the information easily; the fact that each story has been compiled by men who participated in the development of penicillin almost 30 years ago contributes to the historic perspective and guarantees authenticity. The main lesson remains, however, an encouragement to those who face similar apparently impossible missions today and tomorrow. They should lean on this booklet for moral support.

UNIVERSITY OF VIRGINIA  
CHARLOTTESVILLE, VIRGINIA 22901

ALFRED BURGER

**The Pharmacopeia of the United States of America.** 18th Revision. Sept 1, 1970. U.S.P. Bethesda, Maryland. xviii + 1115 pp. 16 × 23.5 cm. \$17.50.

The first impression of the U.S.P. XVIII is one of a loss of many old friends. Row upon row of well-known drugs have been deleted, some for good reasons, while others have fallen in the battle of lack of use. The preface tells us that many new drugs have risen from these ashes, and indeed the volume is thicker than its predecessors. The listings of the various categories of drug reporting are the same as in previous editions. The work remains the official standard of the physical description of each approved drug, and sets the tone for the purity and analytical determination of the substances. Noteworthy is the low price for a book of this size.

UNIVERSITY OF VIRGINIA  
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER