

large fold-outs containing unbridged protein structures which could not have been accommodated even on the oversized pages of this book. There are 18 tables and 70 additional figures, plus several cartoons humanizing events in the evolution of different species.

The numerous fractions of protein molecules whose amino acid sequence is identical or near-identical in analogous or diverse proteins from different species point to a common phylogenetic tree of these proteins that goes back tens and hundreds of millions of years. More than any other thread, the evolution of a protein from its early ancestral molecules can be followed closely to the dim past. The first 87 pages of the volume unfold current facts and thoughts on molecular evolution, with excursions into abnormal hemoglobins and immunoglobulins. Nobody can escape the fascination of these accounts. Active enzyme sites are treated in a separate chapter.

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ALFRED BURGER

**Synthesis of Penicillin, Cephalosporin C and Analogs.** MAGHAR S. MANHAS and AJAY K. BOSE. Marcel Dekker, Inc., New York, N. Y., 1969. xii + 118 pp. 15.7 × 23.5 cm. \$8.75.

The syntheses of penicillins by several authors and the brilliant synthesis of cephalosporin C by Woodward have become classics in the planning and execution of complex stereospecific organic synthetic sequences. These events have been collected in this small book, and presented critically and attractively. It is to be regretted that only very little space has been allotted to synthetic analogs, but then the significance of these analogs lies more in their antibacterial activities than their organic-chemical preparation.

One of the interesting facts about this book is that it has been produced by a direct-off-set process from a beautifully and carefully prepared manuscript. The type is indistinguishable from print but has been set on a typewriter. This process has eliminated proofreading and cut the time between submission of the manuscript and publication of the book to one incredibly short month. More books in fast-moving fields should be processed in this manner.

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**Isolation and Identification of Drugs in Pharmaceuticals, Body Fluids, and Post-mortem Material.** Edited by E. G. C. CLARKE, assisted by Judith Berle. The Pharmaceutical Press, London, 1969. xxii + 870 pp. 16 × 23.4 cm. \$30.00

As the use, abuse, and misuse of drugs has increased, the demand for identification of drugs in tablets, capsules, body fluids, and tissues has risen. Drug manufacturers, the FDA and related organizations, forensic investigations, and last but not least medicinal scientists have become more and more interested in this problem. The present book presents a comprehensive and up-to-date compilation of analytical techniques and methods of identification of almost all the major drugs used in the medical armamentarium.

Significantly, the volume begins with methods to screen rapidly for common drugs that might have been taken in overdoses in emergency cases of poisoning. This is followed by descriptions of extraction methods in toxicology, and of all major modern chromatographic techniques useful in separating and recognizing common drugs. Next identification by ir, uv, and visible-spectrum spectrophotometry is dealt with, giving tables of absorption peaks and many other physical properties of many widely prescribed agents. Another short section deals with confirmation, although more dated, microcrystal tests. A good survey of drug metabolism concludes these general chapters.

The main body of the book (431 pages) presents hundreds of concise monographs on the extraction, chromatography, metabolism, physical properties, and quantitative and spectral identification of every common drug, toxic agent, and solvent. These statements are cross-referenced to appendixes containing melting points (arranged according to temperature), paper chromatographic and  $R_f$  data (arranged according to  $R_f$  values), gas chromatographic data (arranged according to retention times), and uv and ir spectra, with many actual drawings. Additional appendixes contain reagents used in drug detection, and an extensive bibliography. Indexes, paper, and binding are excellent, and a calibrated plastic overlay for ir spectra is attached as a bookmark.

This is an important and massive contribution to drug analysis and identification.

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