Journal of Medicinal and Pharmaceutical Chemistry

VOL. 3, No. 1 (1961)

Book Review

The Neurochemistry of Nucleotides and Amino Acids, edited by R. O. Brady and D. B. Tower. John Wiley and Sons, Inc., New York, 1960. 15 × 23 cm. 292 pp. $10.00.

This book consists of the papers presented at a symposium organized on behalf of the Council of the National Institute of Neurological Diseases and Blindness, by the Section on Neurochemistry of the American Academy of Neurology. The book is divided, roughly equally, into two sections. The first is a collection of seven papers on the nucleotides, and the second consists of six papers concerned with the amino acids. These papers are primarily reviews, but contain much original material and speculation, and numerous references are given. As a result, this collection should provide a good introduction to any aspect of the field which has been covered. In general, the literature has been reviewed up to the date of the symposium (April 1958), but in some instances more recent references have been inserted. The discussions which originally took place after the papers had been presented, have been included, and in addition the editors have contributed summary discussions at the end of the two sections. The latter contain general comments and data which inter-relate and supplement the subject matter of the individual papers.

The adenine, guanine, uridine and cytidine nucleotides are discussed in separate contributions in the first section. Also there is a paper on the pyridine nucleotides, and a very interesting contribution by Bradley and Wolf describing experiments in which acridine orange is reacted with natural and synthetic polymers. In this way, the authors hope ultimately to gain an insight into the rôle of polynucleotides in the nervous system.

At the beginning of the second section there is an excellent but rather brief review by Udenfriend on the neurochemistry of aromatic amino acids. In view of the current interest in gamma-aminobutyric acid, it is not surprising to find two contributions devoted to this substance. The reviewers (Albers, Baxter and Roberts) cover the recent work on the metabolic relationship involving gamma-aminobutyric acid very fully, and draw attention to the importance of the by-pass in the tricarboxylic acid cycle, as well as to the possible connection between seizures and low gamma-aminobutyric acid levels. Another contribution deals with the biosynthesis of the phosphatide bases, and those aspects of the chemistry of asparagine and glutamine of particular relevance in the nervous system

are well reviewed by Tower. In the final contribution, the neurochemistry of the proteins is discussed, with particular emphasis on the turnover rates of protein in nervous tissue.

An author index and a comprehensive subject index, together with the valuable summary discussions give this collection a unity which it would not otherwise have.

Department of Chemistry
University of Virginia

C. BEARD