

The author of this volume, in order to keep his task within manageable size, has confined his attention almost entirely to the chemistry of those antibiotics which have found practical application in human medicine; they are, of course, those in which by far the widest range of readers will be interested, and their chemistry affords ample scope for an exciting and stimulating survey of modern methods of structural determination. Most of the published work on the chemistry of the antibiotics has been concerned with the determination of their structures, in which almost every chemical technique capable of providing assistance has been brought into use; modern physical methods have also played a prominent part. To a lesser degree the structural findings have been confirmed by synthesis and the beginnings have been made of an understanding of the biosynthesis of some of the antibiotics. These various aspects of the chemistry of the antibiotics are treated in this book in a most judicious and balanced manner. The accounts of the determinations of structure are models of clear, comprehensive, accurate, and yet succinct description, and they convey a lively picture of the chemical detective work that has been carried out.

A brief introductory chapter discusses the discovery, development and classification of the antibiotics, the last with regard to their sources and, more importantly, with regard to the chemistry, on the basis of their possible biogenetic origins and chemical structures. Although the structures of the antibiotics show considerable diversity they appear to arise from variations on a limited number of biogenetic themes which form the basis of the subsequent chapters. Chapters 2, 3 and 4 deal with antibiotics derived respectively from one, two or more amino-acids and include chloramphenicol, the penicillins, cephalosporins, bacitracins and polymyxins. Chapter 5 deals with antibiotics derivable from sugars, such as the streptomycins and neomycins. The next three chapters illustrate the versatility of acetate and propionate as antibiotic precursors, providing fused ring systems (tetracyclines, griseofulvin), the macrocyclic so-called macrolides (erythromycin, etc.) and polyenes (nystatin, etc.). Chapter 9 is concerned with a number of antibiotics which do not fall within this biogenetic classification (novobiocin, vancomycin, puromycin). A further chapter describes what is known of the modes and sites of action of antibiotics, while two appendixes give the physical constants of the antibiotics used in clinical practice (in tabular form) and a brief account of a few antibiotics with anti-tumour activity. Each chapter is adequately documented so that the original sources of information can readily be traced.

The volume is typographically most attractive and it is pleasing to note the clarity with which carbohydrate stereochemistry has been presented, though, through an unfortunate lapse, the Park nucleotide near the end of the book is shown with both sugar residues belonging to the L-series. This small book can be warmly recommended as an authoritative and balanced introduction to a dynamic field of research.

J. WALKER

GAS CHROMATOGRAPHY OF STEROIDS

Gas Chromatography in the Analysis of Steroid Hormones

By Herbert H. Wotiz and Stanley J. Clark. Pp. xvi + 288. (New York: Plenum Press, 1966.) \$12.50.

THIS excellent book is recommended to those entering the field of gas chromatography and in particular the highly specialized field of steroid analysis. Not only have the authors drawn on their extensive knowledge but they have incorporated contributions from other recognized authorities.

The earlier chapters are devoted to an introduction to the subject. The theory of the column and also column performance are dealt with concisely but adequately. The chapter on instrumentation is comprehensive and provides an excellent basis for the understanding of this part of the subject. There is a brief description of the various ancillary methods used both in the quantitative and the qualitative analysis of the separation products from the column. Mention is made of the usual means of detection such as ultra-violet and infra-red spectrophotometry, nuclear magnetic resonance and mass spectrometry and optical rotatory dispersion. Attention is directed to the high cost of instrumentation. A brief outline of the history of steroid gas-liquid chromatography is followed by a useful chapter on column procedure. The decomposition of steroids during gas-liquid chromatography, irreversible sorption and the purity of standards and solvents are then dealt with adequately.

The remainder of the book is devoted to the application of gas-liquid chromatography to the determination of steroids. Each chapter is subdivided into two sections, one dealing with the biochemistry and the evaluation of methods and the other with experimental procedures. A variety of methods of estimation for each group of steroids is set out and comparisons made. Progesterone and its metabolic products, the androgens and related steroids, pregnatriol, urinary oestrogens and the adrenocortical steroids are all dealt with. A further reason for recommending this book is that the authors have had personal experience of the methods discussed.

D. B. HORN

STEROIDS

Hormonal Steroids

Biochemistry, Pharmacology, and Therapeutics, Vol. 2. Edited by L. Martini and A. Pecile. (Proceedings of the First International Congress on Hormonal Steroids.) Pp. xxi + 673. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1965.) 160s.

MORE than thirty years have elapsed, as we are reminded in the introduction to this book, since the initial studies were made which led to the subsequent isolation and structure determination of the steroid hormones. Although the early work was mainly of chemical interest, the discovery of the anti-inflammatory effects of cortisone was the signal for the beginning of an intensive study of the methods of synthesis of these compounds and their derivatives, and their physiological and pharmacological effects. Since then practically none of the biological sciences has escaped the impact of this group of compounds, which are currently of major interest to chemists, biochemists, physiologists, clinicians and many others.

The organization of an international congress was a logical development to provide a meeting point for these various disciplines, and 1962 therefore saw the First International Congress on Hormonal Steroids which was held in Milan. This book is the second of two large volumes which record the proceedings of this meeting, and reports all the round-table discussions which were held.

Although this volume reports only a part of the proceedings, it contains a formidable total of seventy-one papers grouped in nine sections. The scope of the papers is best indicated by the titles of the topics discussed. In order, these are: recent advances in steroid chemistry; new anabolic steroids; regulating effect of progestational hormones; action of steroids on pituitary function; action of steroids on tumours; action of steroids on the central nervous system and behaviour; hormonal adjustment to space flight; steroid hormones and metabolites in blood; the adrenogenital syndrome. The large majority of contributions are quite short, dealing with specialized