

action of inhibitors of wall synthesis, such as penicillin, and with recent microscopical studies using fluorescent antibody to demonstrate the sites of wall formation; illustrations are reproduced which show that Gram-positive organisms form new wall substance in a limited equatorial zone at the site of cross-wall formation and that Gram-negative bacilli form it at a multiplicity of sites throughout the old wall.

The book is attractively written. It contains many useful references at the end of each chapter and has an appendix consisting of 67 tables of illustrative experimental findings and summaries of findings. It can be highly recommended to all bacteriologists and biochemists interested in this important subject.

J. P. DUGUID

THE CYTOLOGY AND CYTOCHEMISTRY OF ACUTE LEUKAEMIAS
By F. G. J. Hayhoe, Dennis Quaglino, and Richard Doll. Medical Research Council Special Report Series No. 304 (Pp. ix + 105; 74 figures. 63s.) London: H.M. Stationery Office. 1964.

Dr. Hayhoe's studies on the cytochemistry of leukaemic cells are well known. This book represents the result of an enormous amount of painstaking work on the cytology and cytochemistry of 140 cases of acute leukaemia investigated in the M.R.C. leukaemia trial. The object of the study was to find accurate criteria to differentiate the various types of primitive cells. Blood and marrow films were stained by Romanowski and four cytochemical methods. A large number of morphological and staining characteristics were recorded, and the results analysed by computer. Four groups appeared which are shown to correspond with the conventional type of acute leukaemia, and these are further compared with the biological characteristics of the cases. A most interesting chapter considers the significance of the cytochemical findings and speculates on the nature of the leukaemic change. Evidence is brought forward to support the view that there are two types of haemopoietic stem cell, accounting for the clear separation of lymphoblastic leukaemias from the other types. Full details are given of the various staining techniques employed, and there is a useful summary of the features most helpful in differentiating the various types of acute leukaemia. A large number of excellent photomicrographs are included.

This small book contains a wealth of stimulating ideas, and must be considered essential reading for all interested in leukaemia.

D. ROBERTSON SMITH

METABOLIC DISORDERS OF DOMESTIC ANIMALS By D. E. Stevenson and A. A. Wilson. (Pp. xiii + 198. 35s.) Oxford: Blackwell Scientific Publications. 1963.

This book is a short review of some of the biochemical changes that occur in metabolic disease of domestic animals. Though the subject is of most concern to veterinary surgeons and pathologists it makes fascinating reading for the clinical pathologist. The discussion of salt and water metabolism and disorders of calcium, magnesium, and phosphate metabolism are of particular interest. The section concerned with bovine ketosis will attract the attention of those interested in diabetic

ketosis. There are a number of tables with comparative inter-species data such as blood and plasma volume, plasma proteins, and plasma glucose. M. G. RINSLER

ALLERGY AND TISSUE METABOLISM By W. G. Smith. (Pp. 110; 19 figures. 25s.) London: Heinemann Medical Books. 1964.

Much of the most useful information in modern research comes from workers engaged in what are sometimes called 'fringe subjects'. Therefore, it happens that publications in journals of disciplines other than his own make it difficult for the general worker to keep abreast of the latest advances. This applies particularly to a complex subject such as allergy, where substantial contributions have come from such basic medical sciences as physiology, pharmacology, biochemistry, bacteriology, and experimental pathology. Dr. Smith and his publishers deserve much congratulation for attempting to synthesize these various aspects of research.

The book commences with a general account of the immunological basis of allergy and a detailed consideration of anaphylactic shock. A discussion of the part played by the cellular elements, such as mast cells and eosinophils, is followed by the prospectus and functional significance of histamine, bradykinin, serotonin, and the 'slow-reaching' substances in anaphylaxis. The concluding chapters deal with anaphylaxis, intermediary metabolism, and therapeutic control of allergic disease. The account of this large field is very readable and very concise, comprising only 94 pages of text. This fact, together with a very adequate list of references, makes it most suitable to recommend to general pathologists as well as to students of research.

G. J. CUNNINGHAM

ELECTRONIC AND COMPUTER-ASSISTED STUDIES OF BIOMEDICAL PROBLEMS Edited by Otto H. Schmitt and Cesar A. Caceres. (Pp. xxix + 314; \$12.50.) Springfield, Illinois: Charles C. Thomas. 1964.

This book is a transcript of a three-day meeting sponsored by the National Institute of Health and the U.S. Public Health Service to look into the prospects for developing electronic computers and related equipment to aid the life sciences. Regrettably the date of the meeting is not stated but presumably it was held in the latter half of 1963. Thirty-four experts drawn from industry, applied electronics, basic science, and medicine took part in the proceedings but no formal papers were read. The text consists largely of spontaneous and often spirited and revealing discussion, skilfully guided by Otto Schmitt, Professor of Biophysics in the University of Minnesota. Topics discussed include the data which should be recorded and electronically extracted for computer input, the electronic and computer techniques which should be utilized, the characteristics of magnetic tape recorders which are of importance, and the features which are desirable in an electronic computer designed specially to serve the needs of research in the life sciences.

Within the space of a decade computers have made a remarkable impact on certain branches of science and industry and are about to break into everyday medicine. This book, however, will not provide suitable reading for