

### Antimetabolites and Cancer

Edited by Cornelius P. Rhoads. (A Symposium presented on December 28-29, 1953, at the Boston meeting of the American Association for the Advancement of Science.) Pp. vi+312. (Washington, D.C.: American Association for the Advancement of Science, 1955.) 5.75 dollars.

**T**HE fact that the collection of papers given at this symposium in December 1953 provides a review of the field which is still, on the whole, up to date indicates the general high quality of the contributions.

Stimulating and informative papers by Hitchings, Burchenal, Mandel, Lansford and Shive, Parks and G. B. Brown review a great deal of the work which they and others have done on purine, pyrimidine and folic acid analogues as anti-metabolites, and describe what is known of their relation to the treatment of experimental and clinical malignant disease. Particularly significant in this connexion are papers by Skipper, and by Nichol and Welch, on the development of drug resistance following the administration of amethopterin and 8-azaguanine. Woolley ascribes the inhibition of growth of a spontaneous mouse tumour by analogues of 1:2-diamino-4:5-dimethylbenzene (a vitamin B<sub>12</sub> precursor) to interference with the synthesis of B<sub>12</sub> by the tumour. However, this hypothesis appears to be inconsistent with statements, made elsewhere in his paper, that transplanted tumours do not synthesize B<sub>12</sub> but that, on the other hand, one of these tumours is better inhibited than the spontaneous tumour by the antimetabolites.

Informative papers on perhaps less well-known topics in the field are given by Nickell on plant tumours, by Totter on the effect of aminopterin on bone marrow, by Visser on the use of nucleoside and nucleotide analogues as anti-metabolites, by Nelson on foetal abnormalities following the administration of anti-metabolites and by Weinhouse on the carbohydrate metabolism of tumour cells.

This book provides an excellent review by experts of the state of knowledge on the subject covered by the title.

G. M. TIMMIS

### Mumps, Measles and Mosaics

A Study of Animal and Plant Viruses. By Dr. Kenneth M. Smith and Dr. Roy Markham. (New Naturalist Special Volume.) Pp. xii+160+20 plates. (London: William Collins, Sons and Co., Ltd., 1954.) 18s. net.

**T**HIS is a serious study of animal and plant viruses. In common with other books in the "New Naturalist Series", it deals with its subject authoritatively, yet in a manner which is easily comprehensible to any reader with a reasonable background of general science. Drs. K. M. Smith and R. Markham explain the results of their researches, some of which are quite dramatic, in clear language, and they write compellingly of the work of others. Thus, the book deals with the gradual discovery of the very small size of viruses, of their unique methods of propagation, of the extraordinary relationship of many viruses with insects and "above all, of their border-line status between life and not life".

It is only twenty years since man saw a virus for the first time and only sixty years since the very existence of such things was first suspected. The authors describe how the electron microscope has shown us the shape and appearance of many of the viruses. A large part of the book deals with plant

viruses, with particular reference to their importance in horticulture and agriculture; but there are also chapters on virus tumours and the control of virus diseases. Of particular interest is a section on everyday virus diseases, which should prove to be valuable to students of medicine, hygiene, public health and epizootics.

There are a useful glossary and a table giving methods of testing for common plant viruses. Many practical methods, useful for the university student, are given in the later part of the book. A good bibliography of references is appended to each chapter. The book is generously illustrated with electron micrographs and diagrams. The four colour-photographs, which show the effects of plant and animal viruses, are particularly effective.

W. L. SUMNER

### Statistics of Therapeutic Trials

By Dr. G. Herdan. Pp. xvi+367. (Amsterdam: Elsevier Publishing Company; London: Cleaver-Hume Press, Ltd., 1955.) 50s.

**D**R. G. HERDAN is primarily a statistician, being lecturer in statistics in the Faculty of Medicine in the University of Bristol. His book deals with a subject which has become very important in recent years and is the first book of its kind. It is intended for the use of physicians who wish to draw statistically valid conclusions from observations of the effects of therapy.

The book opens with a statement of fundamental principles which is not easy to read, but not essential to the understanding of what comes later. Diseases are divided into acute diseases, which are best studied by comparing one group of patients with another, and chronic diseases, in which it is sometimes possible to obtain information by calculating the regression coefficient of some measurement against time and comparing the results obtained in the same patient before, during, and after treatment. The appropriate statistical methods are described, and illustrative examples are worked out.

Special sections are devoted to studies of the treatment of pneumonia, poliomyelitis, scarlet fever, diphtheria, typhoid fever, and pneumococcal meningitis, as examples of acute diseases. The chronic diseases which are used as illustrations are cancer, pulmonary tuberculosis, rheumatoid arthritis, congestive heart failure, hypertension, diabetes and nephritis. Statistical studies of the treatment of all these diseases are discussed and it is surprising what a large number of the actual data come from the German literature. The book is attractively produced and could be read with profit by many physicians.

J. H. GADDUM

### The Cytology and Life-History of Bacteria

By Dr. K. A. Bisset. Second edition. Pp. xii+164. (Edinburgh and London: E. and S. Livingstone, Ltd., 1955.) 25s. net.

**U**NTIL recently, bacteriology as a science has suffered from excessive parochialism, in that bacteria have been studied primarily because of their medical, industrial or agricultural importance. Dr. K. A. Bisset pointed out in the preface to his first edition that he was concerned to present the case "for regarding bacteria as living cells with the same structure and functions as other living cells", and in the second edition he incorporates evidence on this point which has been made available by technical advances during the past six years, such as the