Book Reviews

Grundriss der Genetik. By Elisabeth Günther. (Pp. 503; 297 figures + 50 tables. 40.30 M.) Jena: Gustav Fischer. 1969.

This textbook, mainly written for East German students, is a comprehensive and in many ways excellent introduction to molecular and classical genetics. In her preface the author states that she has, during her preparation of the book, been perpetually overtaken by so much recent fundamental work, that she had to give up the struggle to be quite up to date. But considering the relative difficulties with the literature at her place of work (Greifswald), she has overcome the pitfall of being parochial very well. For the Western reader it is nevertheless salutary to realize how well one can cover many fields of genetics, without any reference to many of our household names, and how much solid work done for instance in plant breeding in East Germany is practically unknown here.

By its nature and design the book is largely concerned with microorganisms, plants, and animals, and is not particularly suitable as an introduction to human genetics, it in no way aspires to cover clinical or pathological matters. To the reviewer its main virtue appears to be the awareness—often lost in this time of overspecialization—that genetics is an integral part of biology and not just an intellectual exercise. Most useful for the non-German teacher of genetics are the copious and excellent line drawings.

H. KALMUS

Nucleic Acid Metabolism Cell Differentiation and Cancer Growth: Proceedings of the second international symposium for cellular chemistry. Ed. by E. V. Cowdry and S. Seno. (Pp. xviii + 483; illus. £8.) Oxford: Pergamon. 1969.

Nucleic Acids in Immunology. Ed. by Otto J. Plescia and Werner Braun. (Pp. xvii + 724; 195 figures and 1 colourplate. DM. 88.) Berlin: Springer. 1968.

Replication of DNA in Micro-organisms. Cold Spring Harbor Symposia on Quantitative Biology, Volume 33. (Pp. xxii + 884; illus. $20 including postage.) Long Island, New York: Cold Spring Harbor Laboratory. 1968.

It has been suggested that one of the most remarkable properties of nucleic acids is their stimulatory effect on the reproduction and multiplication of symposia. These three volumes contain 174 papers given at three symposia. The oversatiated reader may well wonder if all these had to be published, and indeed whether the impact of the important contributions has not been diminished by papers which are of interest only to the extreme specialist.

These strictures apply mainly to the first of these symposia, that organized by the Japan Society of Cell Biology. The symposium hardly merits the title 'International', and is a hotch-potch of only lightly related subjects. The main sections are: transcription; RNA-protein synthesis and cell differentiation; cell multiplication and differentiation; control of cell growth, cell transformation and cancer induction by virus.

The second symposium was one of a series organized at the Institute of Microbiology, Rutgers University, 'to provide a forum for the discussion and dissemination of information covering timely topics of wide interest'. The organizers recognized that though the biochemistry of nucleic acids and immunology are two major fields of study, there has been a lack of direct contact between them. This is a valuable function for a symposium as this volume attests. The papers make valuable and interesting reading, whether you approach them as a student of nucleic acids (who ought to know something of the role of nucleic acids in immunology) or as an immunologist whose results often depend on the activity of the nucleic acids. The greatest benefit will be derived by cellular biologists and geneticists who will find much of importance in this symposium. The main sections deal with the following subjects: oligo- and polynucleotides as haptens; use of nucleic acid-specific antibodies (including their use in studying the structure of chromosomes); the role of the carrier in the production of hapten-specific antibodies (including a discussion of how the carrier may modify the specificity of the immune response to the nucleotide hapten); nucleic acids as non-specific stimulators of immune responses and the role of nucleic acids in the formation of specific antibodies. The book ends with a brilliant survey by Melvin Cohn on 'The molecular biology of expectation', dealing with the question of the three mechanisms by which an individual or a cell can react in an adaptive way to an unexpected stimulus; namely immune, detoxifying, and learning mechanisms. Are 'silent genes' expressed in an essential but unknown function or are they 'fossils' of evolution?

Ever since 1933 Cold Spring Harbor Symposia have been the essential reference collection containing the latest work by major workers in a topical aspect of quantitative biology. This volume is no exception. It contains 93 articles all dealing directly with some aspect of the title.