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REVIEWS

PRINCIPLES OF HUMAN GENETICS. Curt Stern. Third Edition. W. H. Freeman and Company Limited. pp. x+891. 315 illustrations, 118 tables. £6·00.

Teachers of human and medical genetics have for years relied on Stern's excellent text for their students. Since the first edition in 1949 and the second in 1960 major advances have been made in human genetics and this third edition integrates these with the pre-existing knowledge in the compact and extraordinarily clear style and presentation for which this book is rightly famous. The intelligent approach of this book, contrasted with others on human genetics is, among other things, shown by the emphasis which the author gives to various aspects of the interaction between heredity and environment and its study. Indeed, one quarter or so of the book is dedicated to twins, quantitative physical traits, polymorphism and selection, the operation of selection in civilisation, aspects of race and human diversity and behavioural genetics. In relation to the latter are not only such questions as intelligence tackled, but personality and extreme antisocial attitudes sensibly and sensitively discussed. Let me stress however that Professor Stern deals equally effectively and intelligently with the more conventional matters such as cytogenetics, the standard forms of monogenic and polygenic inheritance, multiple alleles, gene expression, consanguinity, mutation and radiation genetics, and so forth.

Naturally different persons lay different emphasis on things and I would have enjoyed a more extended treatment of immunogenetics, with more of a discussion of the immunologlobulins, their physiology and the genetics of their production, and I would have liked more on the HLA system, its polymorphism and its relation to disease. But these are minor points of emphasis on which any two human genetics teachers might well diverge. The essential point is that what matters in human genetics, in terms of individuals, families, populations and civilisations is all there, critically examined, clearly expounded and amply illustrated by examples, tabulations and useful diagrams.

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THE GENERATION OF SUBCELLULAR STRUCTURES. First John Innes Symposium. Edited by R. Markham, J. B. Bancroft, D. R. Davies, D. A. Hopwood and R. W. Horne. North Holland/American Elsevier, Amsterdam, London and New York. pp. 372+x. £7·00.

In his Bateson Memorial Lecture on " Molecular Genetics in Retrospect ", the text of which forms a Preface to this book, William Hayes remarks on the fact that the period around 1953 witnessed one of those rare outbursts of understanding (on this occasion in Molecular Biology) which arise when there is a convergence of ideas from several different but complementary fields. This could have been the motivation of the organisers of the Symposium that followed, since the problems posed by the ordered three-dimensional construction of complex subcellular organelles are of such

intrinsic interest that they warrant examination by the rigorous dialectic and Socratic methods which Hayes judges were so successful in the field of molecular genetics. That this Symposium was particularly timely is confirmed by the fact that, apart from three contributions on mitochondria, the remaining fourteen articles have to do with the assembly of viral or prokaryotic structures (*e.g.* bacterial cell envelopes, flagella and ribosomes). We are evidently only at the beginning of our enquiry into the means of generation of subcellular organelles, hoping yet again that lessons learned with microbes will prove applicable to higher organisms.

At the outset it must evidently be discovered how much can be achieved by spontaneous self-assembly, *i.e.* by any assembly process requiring no more information than that contained in the macromolecular subunits of the finished product. One may then proceed to enquire what types of template or of " dismountable " scaffolding are employed in the construction of more complex organelles. The contributors to this Symposium have succeeded remarkably well in relating their findings with specific experimental systems, to the larger enquiry that is the theme of the Symposium. This makes for an instructive and challenging volume to which much reference will be made as work proceeds on these organisational problems. A good book then, which should be of considerable interest to geneticists even though in the main it deals with extra-nuclear events. It is a great pity though that it should have been produced by the Offset-Litho which makes for difficult reading and poor presentation of Tables.

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THE CHROMOSOMES. M. J. D. White. Chapman and Hall. pp. 214. £2·10 (Paperback).

The sixth edition of Professor White's well known book has appeared at a time when there is an acknowledged need for a modern view of cytogenetics, incorporating the advances of recent years. These advances have necessitated, according the preface to this book, the rewriting of many chapters and the addition of one entirely new chapter on the human karotype.

The revisions and additions to this book show the same qualities of accurate reporting and clarity of style which characterise all the author's writings. It is clear that the new sections have been carefully researched and represent a reasonable assessment of recent advances in chromosome studies. Each chapter concludes with a most useful and carefully chosen list of references to (mainly) recent review articles and books. What is less satisfactory is the overall effect produced, one supposes, by repeated piecemeal revision. In places the extensive rewriting and revision has produced imbalances which were surely not intended. Chapter 3, entitled " Number, form and size of chromosomes ", includes sections on heterochromatin and endopolyploidy which are clearly matters of marginal relevance to the title. In the process of revision these sections have grown from rather brief concluding paragraphs in earlier editions to occupy two-thirds of the chapter. This and similar instances raise the question of whether a basic chapter plan devised in 1937 is adequate to support the vastly increased and diversified body of cytogenetical knowledge of 1973. The piecemeal revision of individual