The subjects covered include general themes (pitfalls and problems, polymorphism, linkage, and association) and solid reviews of pharmacogenetics, disorders of protein synthesis, and cellular immunity. There are rather scrappier bits brought together under the general heading of 'expanding areas', but among these is an excellent section on the porphyrias by Price Evans. About half the book came within the reviewer's field of interest, and he enjoyed it very much. There are some mysteries. On page 62 is shown a pedigree of a family of sufferers from tylosis, in which in successive generations the ratio of affected to unaffected among children of gene carriers is 5:1, 14:4, 19:5, and 2:0. On a hypothesis of simple dominance one might expect a 25:25 ratio, and a ratio of 40:10 or better only a little more often than 1 in 100,000 times. So very rare events do occur, in medical genetics, even as in E.S.P.!

ELIOT SLATER

Human Developmental Genetics. By David Yi-Yung Hsia. (Pp. 400; 153 illustrations. 136s.) Chicago: Year Book Medical Publishers. 1968.

In recent years embryology has changed from a descriptive subject into an experimental science—a transformation that has led to extensive studies on the significance of inherent as against environmental factors. Studies of this type supported by clinical observations on lethal and sublethal defects have in turn led to the emergence of Developmental Genetics as an independent discipline with ramifications almost as wide as those of Genetics in general.

Dr. David Hsia has contributed extensively to these developments and his book is particularly welcome as the first systematic treatise on this growing subject. Of necessity it contains much that is familiar to human geneticists, but he has organized his analysis of an extensive and diffuse literature so adequately that a great deal of little known and abstruse information becomes readily assimilated and appreciated. The book does in fact add a new dimension to the monograph literature on human genetics.

The first of the six sections of his book, devoted to general considerations, draws mostly on unsystematized general embryological and genetic studies in a most illuminating way. Equally illuminating is the succeeding section on prenatal growth—both normal and abnormal. The two subsequent sections—one on cytogenetics and the other on biochemical genetics—cover material that is well defined and fairly readily available. The more difficult field of immunogenetics is briefly but adequately discussed in the penultimate section in relation to both the immune mechanism in general and the maternal-foetal reactions in particular. The concluding section deals with the relevant aspects of environmental pathogens affecting development—radiation, infections, and drugs are all considered. Informed and well balanced, this book is as much a contribution to paediatrics as to genetics.

ARNOLD SORSBY

Late Somatic Effects of Ionizing Radiation. By Charles D. Van Cleave. (Pp. vii + 310; illustrated +

tables. \$3.00.) U.S. Atomic Energy Commission: Division of Technical Information. Available from: Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U.S. Department of Commerce, Springfield, Virginia 22151, U.S.A. 1968.

This is very useful (and cheap) review of the field of the long-term somatic effects of ionizing radiation. The author assumes little knowledge on the part of the reader and gives a useful introduction on both the physical and biological aspects of the problem together with some of the basic concepts current in radiobiology. The book is clearly orientated towards the study of higher organisms including man, but reference is made to lower organisms when this is appropriate.

The main part of the book deals with effects on the whole organism, and there are chapters on life shortening, tumorigenesis, non-neoplastic effects, and prenatal irradiation. The second section deals with effects on tissue cells and macromolecular assemblies, and a short third section deals with the subject of degradative change and ageing.

The author displays a quite unusually wide knowledge of experimental studies with laboratory animals and cultured cells and of the relevant clinical studies. This is one of the most pleasing features of the book. Another is that when describing experiments carried out by others he includes enough of the basic information for the reader to be able to judge for himself whether the conclusions drawn are justified. The review is however a critical review and not merely a compendium of previous work. Perhaps one could criticize the author on occasion for keeping his own comments on the brief side and sometimes for drawing conclusions that seem difficult to justify from the foregoing text. For example in summarizing the life-shortening effects, the conclusion is drawn that, 'studies on the effect of age at the time of exposure show significantly less life shortening at later ages or even none at all'. It seems fairly convincing from the text that if one makes an appropriate allowance for the amount of remaining life expectation, then sensitivity to this effect of radiation increases with increasing age just as do other short- and long-term effects.

Sometimes in the discussion of a particular area where rapid advances are being made the text seems a little out of date, as with, for example, the discussion of the relation between radiation and viruses in the induction of leukaemia. This is not a serious criticism—it does however serve to make one conscious of the achievement of the author in covering on his own so many different approaches so thoroughly.

The text is well written, being both clear and concise. Good reference lists are given at the end of each chapter and the index is short but adequate.

On the whole a useful book for both the specialist and for those who might read it for interest alone. It is emphasized that the title is precise and accurate; the book does not attempt to deal with genetic effects of radiation,

D. G. HARNDEN