account of the interplay between cell motility and adhesion in the sorting out process. Cells move either singly or in groups and orientate into appointed territories. That cells know their place is comparatively easy to demonstrate superficially *in vitro*. However, the idea that the sorting out of cells depends on differences of adhesive strengths may be of interest but it has little or no evidence to support it. The brief reference to chemical bonds being responsible for adhesive recognition is more in keeping with there now being available evidence that permits one to begin explaining cell contact, recognition and response in molecular terms. What is known about the initiation and synthesis of haemoglobin in erythroid cells (R. A. Rifkind), melanogenesis in pigment cells (J. R. Whittaker) and the fusion of myogenic cells *in vitro* (I. R. Konigsberg and P. A. Buckley) are also concisely dealt with in this part of the book.

In Part III the consideration of tissue interactions by J. Lash is thought provoking. B. S. Spooner dwells on the theme of cell shape changes in morphogenesis being dependent on both contractile and support systems. The use of cytochalasin B as a tool for investigating shape changes assumed by cells would seem to implicate the sub-membrane microfilamentous system. But it must be remembered that the site of action of this drug in or on the cell is by no means clear. One of the fiercest problems in development is discussed by C. E. Wilde; it concerns the way the genome regulates morphogenesis. R. Auerbach clarifies the immune response and immune reactions, and R. E. Billingham deals authoritatively with immunological tolerance.

In Part IV, I. T. Oliver brings into focus the problems of specific enzyme induction in developing tissues and the need to identify specific inducers. C. R. Fibman and G. R. Wyatt regard hormones as stimuli that evoke patterns of response which are already programmed in the cell. The need to identify hormone receptors, particularly at the cell surface, is recognised. It is curious that hormonal induction of RNA in the giant chromosomes of insects is omitted as a topic in this section. D. T. Suzuki draws attention to the promise of conditionally expressed mutations to provide insights into regulatory mechanisms of organisms. Congenital malformations are discussed by L. Jackson, regeneration by E. D. Hay, and ageing by V. J. Cristofalo.

All of the articles are valuable and their value is enhanced by their being published in a single volume. It may well be that the concepts and ideas in many of the articles are liable to be replaced in the near future. But this in no way detracts from the book providing a student with a fascinating panoramic view of a subject which has become so diverse.

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INTRINSIC MUTAGENESIS, A GENETIC APPROACH TO AGEING. Sir Macfarlane Burnet. Medical & Technical Publishing Co. Ltd. Pp. ix+24+20 text figures. £6·75.

This is an extremely interesting book not least because it attempts to bring some functional unity of approach into a field of study which, it is fair to say, frequently strikes non-gerontologists as inchoate and formless.

The book arose, Sir Macfarlane Burnet recounts in his introduction, as an attempt to find " logical connection between two findings that most gerontologists regard as axiomatic: that the lifespan of a mammal is genetically determined and that the actual process of ageing is an accumulation of genetic error, of somatic mutations ". Intrinsic mutagenesis is a descriptive label for the view that mutation is due solely to error production in the operation of the DNA duplication and repair enzymes. By extension, ageing is the result of one, or both, of the effects of greater error proneness, *i.e.* change in rate of intrinsic mutation and accumulation of mutations at constant rate with advancing age.

The book is divided into four sections with between three and six chapters in each section. The sections deal with mutation and the concept of intrinsic mutagenesis, the physiology and pathology of ageing, malignant disease and age-associated conditions other than malignant disease. It is limited in its consideration to mammalian species but that this is so, is made clear early in the book.

The backbone of the argument runs as follows: that mutation levels in germ line cells are characteristically higher than can reasonably be accounted for by external agents, that genetic variance for mutation rates exists, that in the course of evolution a balance is struck between the advantages of new variation and the disadvantages of mutational load, that there are evolutionary pressures which bear upon the average longevity enjoyed by a species, that the mechanisms determining somatic mutation are concerned with " biologically significant and measurable infidelity of DNA replication " and that the mutation rates in somatic cells will be related to those in gametic cells.

Building upon this structure the author develops the theme that the neoplastic diseases, autoimmune diseases and conditions such as atherosclerosis and diseases of postmitotic tissues such as the central nervous system can reasonably be linked to one another through the medium of the fidelity of DNA replication and possibly RNA transcription. Much of the argument is plausible, all of it is interesting and even though on some topics (for example the role of viruses as oncogenic agents) there are some inconsistencies, this remains a book which is provocative, stimulating and of great interest to all students of fundamental life processes.

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MECHANISMS OF GENETIC RECOMBINATION. V. V. Kushev. Studies in Soviet Science. Translated from Russian by Basil Haigh. Consultants Bureau, a division of Plenum Publishing Corporation, New York and London, 1974. Pp. 253+95 text figures+33 tables. $30.00.

This is a scholarly work which examines the field of genetic recombination in considerable detail. The approach is historical, with the result that the path taken is littered with discarded hypotheses. This makes the book a difficult one to read as data are often presented first in the context of an abandoned idea, and the discussion of current theories comes late in the book. Nevertheless, it is of great value to have the analysis of recombination