into genetical and statistical sections. Most of the examples used in the book are taken from human genetics. Moreover there are separate chapters devoted to special topics in human genetics such as segregation analysis (simple and complex), human blood groups, linkage analysis, histocompatibility testing, and single-locus versus several-loci models. Each chapter has a series of problems for the student but unfortunately no results are given. Despite the size of the book (592 pages) the coverage of the field is not complete and some topics are discussed only briefly. For example the effects of genetic drift and small population size, assortative mating, mutation and selection in evolutionary genetics and the methods of analysis for quantitative traits are some important subjects which are treated rather briefly.

The book is well presented with very few errors, despite its complexity and size. Since much of the material presented is available elsewhere, it may not be an essential book for the statistical geneticist, but it should be a very useful reference text, especially for the statistical human geneticist. I have no hesitation in recommending it to anyone interested in these topics.

CHARLES SMITH

Cytoenzymology and Isozymes of Cultured Cells.

By P. J. Melnick. *Progress in Histochemistry and Cytochemistry*, Volume 2, No. 1. (Pp. 77; 30 figs. DM. 44.00.) Stuttgart: Gustav Fischer. 1971.

This short book is essentially two reports of different aspects of the author's recent work on enzymes of cultured cells.

The first part deals with cytoenzymology, which is defined as the application of histochemical techniques to free-living cells. There is a clear description of how the many problems—such as finding conditions in which substrates are able to penetrate cell membranes and yet soluble enzymes and reaction products are prevented from diffusing out—were overcome. Activity in all 28 hydrolytic and oxidative enzymes studied was successfully demonstrated and our attention is drawn to two significant observations: firstly, that the product was almost always seen to be granular. If this is really an indication of the sub-cellular organization of these enzymes as the author speculates, a powerful new tool for the study of activity-structure relationships could become available. And secondly, that the extent of reaction is very variable in different cells of the same preparation. This would also be important if, as is suggested, it was found to correlate with the growth cycle of the cell. Even if these speculations are incorrect and the observations are simply due to the unusual conditions used and the technical difficulties encountered, the author has shown that enzyme activity can be consistently demonstrated in living cells. It is therefore likely that cytoenzymology will eventually become useful in the study of the effect of environmental and other changes on cell enzymes in conditions nearer to physiological than those more commonly used.

Though cytoenzymology may hold some distant

promise, the more familiar subject of isoenzyme separations by gel electrophoresis, which is the theme of the second part of this book, is of more direct application. When the isoenzyme patterns for several of the 18 enzymes in each of the 5 cell lines studied are compared, they are seen to be quite different and, therefore, of use in cell line identification. The extension of such studies to many more cell lines will obviously be worthwhile.

This book is recommended to those doing experimental work in the fields discussed but the general reader will want to wait until the promises have been fulfilled.

R. B. ELLIS

Hereditary Sensory Radicular Neuropathy. By David C. Wallace. (Pp. 114; illustrated + tables.) Sydney: Australasian Medical Publishing Company. 1970.

Dr Wallace describes a large Australian family who have the condition where a distal sensory neuropathy, often involving the legs only, is associated with recurrent ulceration of the feet. The dominant form, present in this family, develops after puberty, is only slowly progressive, and is severer in males. As the author points out, the main interest in the family lies in describing the range of clinical manifestation that may result from the same mutant gene. The disorder varies from females who have no symptoms (but where sensory abnormalities will be detected by a medical examiner) to a male, with a distal neuropathy, both sensory and motor, mutilated feet from recurrent ulceration and osteomyelitis, and secondary amyloidosis. Useful radiological and pathological information are also given in this book and genetic data are adequately discussed. However, little that is new is revealed.

SARAH BUNDEY

Chemical Mutagenesis in Mammals and Man.

Edited by F. Vogel and G. Röhrborn. (Pp. xiv + 519; 95 figures + tables. \$34.10.) Berlin, Heidelberg, and New York: Springer Verlag. 1970.

The induction of mutations following exposure of mammals, or mammalian cells, to chemical agents is a topic of considerable importance; all the more so because of the increasing exposure of our own species to a wide variety of noxious chemical agents in our general environment and to the increasing use (and misuse) of an ever widening variety of pharmacological products. The present volume would therefore appear to be timely, and in their preface, the editors remark that the book is particularly designed for those who are interested in the problem of chemical mutagenesis in relation to man. The aim is laudible. Unfortunately, the execution leaves much to be desired.

The volume in fact contains papers presented at a