Biochemistry. The first chapter by Merrill Chase is a historical view of the immunology of skin reactions given from his personal perspective. The remaining 19 chapters are written in the more usual, impersonal style of scientific writing and cover a wide range of immunological topics. If there is a pattern in the choice of topics it is not obvious, nor is there any apparent logic in the order of the reviews. Nevertheless, most of the reviews are up to date (including 1984 references) and well endowed with references. The topics include fundamental aspects of immunology, for example, T and B lymphocyte differentiation, mechanisms of lymphocyte mediated cytotoxicity, and T lymphocyte receptors, as well as disease related topics, such as psoriasis, myasthenia gravis, diabetes, and perhaps inevitably chapters on both human T cell leukaemia viruses and the immunology of AIDS.

This is certainly not the sort of book to read from cover to cover, but it should provide a valuable source for teachers and researchers who need a current account of any of the selected topics.

N Matthews

Fragile Sites on Human Chromosomes
By Grant R Sutherland and Frederick Hecht. (Pp 280; figures + tables. £40.00.) Oxford: Oxford University Press. 1985.

Study of the chromosomal fragile sites has been one of the fastest growing areas of cytogenetics over the past five or six years, and this book brings together many of the clinical and laboratory aspects under one cover. It is thus a very useful and informative text for clinical geneticists, routine cytogeneticists, and research workers alike.

The fragile sites can still at this time be firmly divided into the autosomal variety on the one hand, which may have clinical relevance, though this is as yet unproven, and the fragile Xq27 or 'marker X' on the other, which certainly does have relevance in the field of mental retardation. This demarcation between the fragile X and the rest tempts the reader to regard them as separate entities, and so it is with some surprise that instead of finding the book divided in this manner it attempts to set the fragility of the X chromosome into the context of all the other known fragile sites.

The book then divides naturally into laboratory aspects, clinical aspects, and genetic aspects of all the fragile sites taken together. Rather than considering marker X and the rest of course, the clinical aspects section is primarily devoted to fragile Xq27 because it is this site which is associated with Martin-Bell syndrome and mental retardation. The phenotype associated with the syndrome is described in some detail. This section also discusses the special problems associated with the fragile X syndrome, in that female heterozygotes can be clinically affected, sometimes quite severely, while males can transmit the condition while remaining unaffected.

The chapters on the laboratory aspects are particularly useful for the cytogeneticist as they clearly define the different classes of fragile sites and describe how each may be detected. The section on the genetic aspects, however, permits speculation and, after tackling the very knotty (in the case of the fragile Xq27) problem of segregation analysis, it offers a chapter on the possible relationship between the fragile sites, cancer, and oncogenes, an area which opens up many possibilities for research. Perhaps too in the next edition of the book, DNA probes will have moved from the chapter on future prospects.

Attempting as it does to bring together all the different aspects of the chromosomal fragile sites, this book is especially recommended for departments where cytogeneticists and clinicians are working alongside each other as it is instructive for both. It is, however, rather expensive for the individual person who presumably must wait his turn for the departmental copy.

Tessa Webb

Chemical Mutagens. Principles and Methods for their Detection

This volume represents the latest in a series which contains an extensive range of contributed papers covering various aspects of mutagenicity. The papers include descriptions of many of the assays and techniques used to detect and evaluate chemicals which may be capable of inducing genetic change in living cells. As in previous volumes the Editor, Dr de Serres, has collected together a variety of papers written by experts in particular aspects of the diverse scientific discipline which is now generally called 'genetic toxicology'.

This latest volume contains four chapters describing techniques involving the use of strains of bacteria and viruses to detect mutagenic activity, two chapters describing the use of cultured mammalian cells, and two chapters describing rather more 'unusual' assays, that is, a grasshopper neuroblast...
system and the use of an artificially created granuloma pouch (by the subcutaneous injection of sterile air) in the rat. Two further chapters describe the detection of mutagens in cooked food and in faeces.

The volume will provide interesting reading to those specialists working in the field of genetic toxicology. The general reader should, however, be aware that a considerable background knowledge of the field is necessary before it can be appreciated in full. It is likely that most readers will confine themselves to specific chapters which cover areas which overlap their own interests, for example, the chapter by H F Mower on Mutagens in human faeces may be of interest to workers in the area of cancer of the colon. Similarly, the chapters describing new bacterial strains will be of interest to researchers looking for suitable systems for the investigation of specific chemicals.

All chapters in the book are clearly and concisely written, comprehensively referenced, and maintain the high standard achieved by previous volumes of the series. Personally, I would have liked to have seen a little more conformity in the style of presentation between the individual chapters, but the variation does not detract from the value of the whole. This volume, as with all the others in the series, has an essential place on any library shelf of a laboratory investigating the role of environmental chemicals in the production of inherited defects and cancer formation.

J M Parry

**Human Prenatal Diagnosis**


This volume, number 18 in the Clinical and Biochemical Analysis series, presents a comprehensive and balanced overview of the state of the art of prenatal diagnosis as it exists at present. The publishers, editors, and authors are to be congratulated on producing a very readable account of topical developments in such a rapidly expanding field.

The contributors, based almost entirely in North America, have produced 15 chapters covering all aspects of prenatal diagnosis. Several contributions are particularly meritorious. The review of amniocentesis for cytogenetic studies provides much useful data for those involved in busy pre-amniocentesis counselling clinics. There is also a particularly valuable compendium of metabolic disorders diagnosable in utero, supported by almost 400 references. Fetoscopy and chorion biopsy are well covered with ample discussion of risks and limitations. The vexed questions posed by multiple pregnancy and possible fetal therapy are discussed in detail and the addendum on DNA technology is a model of clarity.

There are, however, a few disappointments. The section on fetoscopy includes a list of dysmorphic syndromes with numerous spelling mistakes, and since fetoscopy plays a very valuable role in the prenatal diagnosis of Mendelian dysmorphic syndromes, it is unfortunate that this subject is not covered in greater depth. A discussion of the apparent association of low serum alphafetoprotein with Down syndrome pregnancies would not go amiss. Finally, although ultrasonography is well reviewed and lavishly illustrated, the second trimester diagnosis of cardiac, cerebral, and limb abnormalities receives only scant attention.

These are relatively minor criticisms of a generally excellent book. The text is clearly presented and well indexed. This volume will be of interest to everyone involved in the complex area of prenatal diagnosis and can be strongly recommended.

I D Young

**Family Studies in Genetic Disorders**


This book, written by two very experienced social workers in the field of medical genetics research, is essentially a practical guide to organising and carrying out family studies. The authors define studies of two types: those in which ascertainment of probands must be unselected and consecutive in order to determine the previously unknown mode of inheritance and risk of recurrence; and those in which a non-random group of families with a condition of known inheritance are studied to delineate further clinical and biochemical aspects of the disorder. Although not specifically referred to, molecular genetic linkage studies could be included in this group. The book is clearly divided into sections which consider, for the two types of study, the indications for an investigation, ascertainment, approach to probands and relatives, interviews, long term contact with families, and data recording. Data analysis is only briefly covered. The reference list is extensive and particularly strong on the psychosocial aspects of genetic counselling (with a few surprising exclusions).

The step by step advice will be invaluable to research assistants embarking on a genetic family