three who edit the volume are from Heidelberg, New York, and Essen respectively and the first two draw on their longstanding interest in Fanconi anaemia (FA) to contribute as authors, commencing with a review of clinical features based on 162 cases of FA known to their International Fanconi Anaemia register. The clinical section also contains two reviews of patient series in Holland and South Africa and two papers on therapy, one devoted to detailed aspects of bone marrow transplantation. These detailed sections are valuable for their discussion of the rarer problems, such as endocrine deficiency, in particular the frequent occurrence of hypothyroidism and growth hormone deficiency.

Section II contains seven papers on the cytogenetic aspects of the disorder in homozygotes and heterozygotes including a detailed analysis of the efficacy of prenatal diagnosis. In section III six papers explore the cellular defect with contributions on oxygen metabolism and the effects of microinjection and DN transfection studies. The fourth section has three papers devoted to complementation studies and the book ends with a short contribution from a couple who experienced the impact of this devastating disease in their own family.

The overall impression of this book is that it contains a wealth of detail, though the style shows the usual marked variation of a multiauthor book and the editors could have imposed themselves rather more. In particular, the repeated reference to original papers and basic description of the disease and its inheritance in many introductions gives the impression of a collection of essays rather than a coherent book. Criticism of repetition aside, this book is a valuable contribution and should find its place in the library of any genetic or paediatric unit responsible for the care of patients with this depressing yet fascinating condition.

JOHN BURN

Meiosis. Development and Cell Biology Monographs 22. B John. (Pp 396; £50·00.) Cambridge: Cambridge University Press, 1990.

In this excellent monograph on meiosis, Professor John provides an authoritative account of a process which has fascinated him throughout a distinguished career. I can well remember a conversation we had together some years ago in Canberra when he remarked that it was his belief that cytogeneticists could generally be divided by their basic interests into 'somatic' and 'meiotic'. He certainly fell into the latter category, and the detailed and comprehensive coverage of the basic meiotic process across a range of plant and animal species provided by this book displays his true depth of knowledge on the subject. The reader is given a mass of information and data from a variety of species, some exotic and bizarre, others more familiar, the data to a certain extent reflecting the fact that a large part of the author's time has been spent in Australia, the marsupials and many native insects of that country being well represented. Cytogenetic, biochemical, and physiological aspects of meiosis are all covered, detailed accounts being given of the basic processes of synapsis, recombination (including conversion), chiasma formation, and chromosome segregation. Up to date information is provided on the synaptonemal complex, recombination nodules, and spindles together with recent biochemical findings regarding the processes of pairing and crossing over at meiotic prophase.

Overall, the book is one for the geneticist or cytogeneticist interested in the basic mechanisms involved in this complex biological process. It is perhaps of less interest to the medical geneticist grappling with meiotic events in humans, as the vast majority of the examples provided are gathered from species other than man. Nevertheless, the basic concepts described are equally applicable to all species.

The postlogue to the book points out the fact that every aspect of meiosis is beset with both controversial and unresolved issues. So although new information is available, a complete theory of meiosis is still lacking. Professor John, however, has provided a fine and detailed statement of the issues and problems, and his book admirably bridges a gap which currently exists on the library shelf. Together with the 327 pages of text, there are over 400 references and a well-prepared index. I could thoroughly recommend it to the reader.

ANN C CHANDLEY

Flow Cytogenetics. Ed Joe W Gray. (Pp 312; £33·00.) London: Academic Press. 1989.

This is the first book devoted to the use of flow cytometry for the analysis and sorting of chromosomes. Until recently, few laboratories worldwide have used flow cytogenetics, although the products of the Los Alamos and Lawrence Livermore laboratories in the form of flow sorted, chromosome specific DNA libraries are widely used in molecular biology. However, modern commercial flow cytometers are now capable of producing high resolution flow karyotypes and there is an increasing demand from molecular biologists for chromosome analysis and sorting. This book forms an invaluable reference text for centres embarking on flow cytogenetics and is interesting reading for established groups.

This multiauthor book has been written by many of the leading names in flow cytogenetics. The chapters fall into two main groups, those addressing the technical aspects of obtaining high resolution flow karyotypes and those describing applications. From the technical point of view, chapters on instrumentation, cell culture, chromosome isolation, and staining technology are well written and provide both practical information as well as detailed technical discussion of factors influencing the resolution of measurements. Although the information supplied falls short of providing specific protocols, adequate reference to published reports fulfils this need.

Sorting of chromosomes is well covered, including a chapter on prepurification of chromosomes by velocity sedimentation and an interesting, if not widely applicable, chapter on the high speed chromosome sorter used to construct many of the gene libraries obtainable through the US National Laboratory Gene Library Project. A further chapter details the experiences of those involved in this project and describes the strategies used for cloning DNA from flow sorted chromosomes. The chapter on the statistical analysis of both univariate and bivariate histograms as applied to chromosome data documents carefully the accuracy of various methods for peak estimation.

Applications of flow cytogenetics are covered in two general chapters on the uses of univariate and bivariate flow karyotype analysis and more specifically