and fetal tissue. The overview of clinical cytogenetics provides a very good summary of the indications for pre- and postnatal cytogenetic studies and discusses the clinical and ethical implications of these observations. The final chapter, written by C. G. N. Mascie-Taylor, is a useful guide to the application of clinical cytogenetics.

Those with an interest in one of the components listed above will find useful, up to date, state of the art material in this book. The chapters are, on the whole, well and fully referenced, and these can serve as starting points for more detailed, particular studies. The diversity of the approaches is such that the book may readily be commended to many specialists. It is a distinguished addition to the volumes already produced in this particular series.

ERIC SUNDERLAND


The authors' intention with this book is to provide a comprehensive set of protocols enabling the researcher or student to obtain and examine chromosome preparations from just about any organism from a dinoflagellate to a mammal. It covers methods for fixation, staining, banding, plant and animal tissue culture, cell fusion, autoradiography, monitoring (sic) for environmental toxicants, in situ hybridisation, and the underlying DNA techniques required for these methods, in situ immunofluorescence and antibody labelling. Approaches to chromosome examination by a range of microscopic techniques are discussed, including phase contrast, confocal, fluorescence, and electron microscopy. In addition, there is some discussion of the theoretical principles relating to the preparatory methods and microscopy. This book contains a wealth of information, and it is certainly enlightening to read of the myriad different ways in which chromosomes may be prepared, manipulated, and examined; despite this, to fulfil its intention in a mere 368 pages is a tall order.

Reviewing this all encompassing volume from the standpoint of a clinical cytogeneticist, my approach has been to determine whether those methods with which I am myself am more familiar are dealt with adequately, and I have had to make some assumptions that other topics are covered to a similar standard.

I found the book to be an unusual blend of ancient and modern, with methods apparently often taken directly from laboratory notes and working protocols over many years. Just one example concerns a description of microphotography being undertaken on large format plate cameras, reference to which occurs but a few pages before an outline of computerised karyotyping and image analysis. It is a pity that, having discussed the production of hard copy images, a book dealing with an essentially visual science should contain so little illustration.

The methods suggested for mammalian tissue culture mostly belong in the archives (along with that plate camera), certainly as far as the clinical cytogenetics laboratory is concerned. Separating leucocytes for short term culture was of date 25 years ago, and the practice of embedding fibroblast explants in chick embryo extract and coelomic plasma is simply antiquated. Inclusion of historically important methods would be fine as long as more applicable up to date information were provided also. However, no mention at all is made of the current, much more straightforward, approach to tissue culture made possible by modern equipment, synthetic growth factor supplemented media, and years of experience; nor of the production of elongated chromosomes for high resolution analysis by synchronisation or intercalating agents.

To use this volume as a bench top recipe book would be difficult; the protocols are not easily followed, laid out as note form text rather than lists, not in any consistent format, and not always in the most logical order. To find one's way around a technical manual of this sort requires an adequate index. Unfortunately, the index is incomplete to the extent that cross reference between sections is impossible. For example, the human stain is recommended in the method for trypsin G banding it appears neither in the index nor in the chapter on stains. Exotic ingredi-