and fetal tissue. The overview of clinical cytogenetics provides a very good summary of the indications for pre- and postnatal cytogenetic studies and the means by which these can be achieved in a clinical setting. In addition, a brief guide to the major chromosome abnormalities is given. The background information on CVS and the relative advantages and pitfalls of direct and culture methods is well presented. The chapters on amniotic fluid and fetal tissue analysis provide an excellent and informative review of these subjects, with a wide range of techniques that should suit all tastes. Choice of in situ or flask harvesting methods is given and the different requirements for analysis and the detection of mosaicism from these two different types of harvest is discussed in detail.

In all cases the sections devoted to background information, troubleshooting, and time consideration provide a helpful adjunct to the methods.

Current Protocols in Human Genetics can be wholeheartedly recommended to all workers in the human genetics field with a basic grounding in molecular biology, but you will have to buy *Current Protocols in Molecular Biology* if you are not to be left searching for basic protocols essential for your research.

L KEARNEY, A WALLEY,
C WARD, A HARRIS

Anthropometry: the Individual and the Population. Cambridge Studies in Biological Anthropology. Editors S J Ulijaszek, C G N Mascie-Taylor. (Pp xiii + 213). Cambridge: Cambridge University Press. 1994.

This is the fourteenth book in the *Cambridge Series in Biological Anthropology*, a series which has distinguished itself by providing an excellent number of publications both in biological anthropology per se and in closely related fields of study.

For a considerable period, anthropometry constituted the most important of the investigatory techniques used by physical anthropologists, both to examine the morphological relationship of extinct and extant populations, and also to examine so called racial variability. With the development of human population genetic studies in the 20th century it was increasingly assumed that, in many contexts, anthropometry was rather old fashioned, and it became somewhat discredited.

However, this volume abundantly demonstrates that anthropometric techniques, procedures, and results all have value in a number of somewhat distinctive contexts. Many of these are dealt with in the chapters of the present volume. There is a succinct and valuable introduction by Lasker, in which he outlines the changes in research paradigms over the years. The 11 remaining chapters in turn are devoted to the following topics: asymmetry and growth, intra- and inter-observer error in anthropometric measurement, statistical issues in anthropometry, other aspects of human growth, variability in adult body size, anthropometry and body composition, physical performance and motor fitness, and, lastly, anthropometry in the US armed forces. It is evident that a wide range of diverse topics is covered in this volume, and it is, in my view, appropriate that the multi-faceted nature and uses of anthropometry should thus be elucidated.

Those with an interest in any 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

Chromosome Techniques—A Manual. A K Sharma, A Sharma. (Pp 368; £55.00) Chur, Switzerland: Harwood, 1994.

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 such methods, immunofluorescence and antibody labelling. Approaches to chromosome examination by a range of microscopic techniques are discussed, including phase and interference, 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 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 of this blend 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 not one single 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 out of date 25 years ago, and the practice of embedding fibroblast explants in chick embryo extract and cockerel plasma is similarly 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, while Leishman stain is recommended in the method for trypsin G banding it appears neither in the index nor in the chapter on stains. Esoteric ingredients such as Abopon, Euparal, and Alcian blue appear seemingly at random without proper explanation of their sources or components. I encountered difficulties trying to track down protocols using the fluorescent dye acridine orange, where one important staining method, referred to in the text, is not indexed. Although references are appended at the end of the book they are incomplete; for example trypsin banding is described without acknowledgement of Seabright, counterstain enhanced fluorescence without mention of Schweizer. References are not systematically given in the text, so that referral back to the original source may not be possible. Readers not familiar with certain abbreviations will find the inconsistencies and lack of explanation of the abbreviations frustrating. Bromodeoxyuridine is given variously as BUdR, BrdU, and BrUrd. There is also disparity in the units used to describe concentrations: three consecutive methods give the concentration of the fluorescent dye Hoechst 33258 as a percentage, in moles, and in micrograms per millilitre respectively.

Some up to date methods are to be found in the latter part of the book, dealing with microdissection, in situ hybridisation, and special molecular techniques, although in this rapidly developing field the inclusion of some superseded methods is to be expected. Again, however, the incomplete indexing and cross referencing mean that only with difficulty could the protocols be attempted without extensive previous experience.

I have to admit that there are many topics included in this book on which I am not qualified to comment, but then few readers of *Journal of Medical Genetics* will want to culture pollen or make EM preparations from slime moulds. Basically, I believe that the authors have tried to cover too wide a range of methods and, while it may be of interest to the student as a resumé of what can be done with chromosomes and DNA, the book is not a practically useful bench manual. The scientist would be better advised purchasing two or three specialised texts, focusing in detail upon up to date information concerning specific topics. As far as medical geneticists are concerned, there is unfortunately little of practical value to recommend this volume.

R T HOWELL

Identification of Transcribed Sequences. Editors U Hochgeschwender, K Gardiner. (Pp 304; £89.00.) New York: Plenum Press, 1994. ISBN 0-306-44835-1.

One of the major challenges facing the Human Genome Mapping Project is how to

identify the 5% or so of the human genome which is coding. This issue was addressed at the Third International Workshop on the Identification of Transcribed Sequences, held in New Orleans on 2–4 October 1993 and the proceedings of which were recorded in this book.

All the main gene identification techniques are covered, with sections on classical approaches, hybridisation based methods such as direct cDNA selection, exon trapping, computer based approaches, and oligonucleotide fingerprinting of cDNA libraries. For the most part the chapters are well written and, although this is not intended to be a laboratory manual, the methods sections are fairly detailed. Because this is a collection of reports, rather than a single author overview, it lacks cohesion and I would prefer to have seen a little more critical assessment of the various methods by the editors in the discussion section at the end of the book. Basically each method works, but with a few problems. Nonetheless, I think that this book will be very useful for any researcher working on gene identification.

If you are involved in a positional cloning project and are wondering which is the best gene identification method to choose, this book will not provide the answer. If, however, you have already chosen a gene identification method and are looking for examples of the

“collective experience” you will find this volume therapeutic.

J DAVID BROOK

Molecular Genetics of Inherited Eye Disorders. Editors A F Wright, B Jay. (Pp 528.) Switzerland: Harwood Academic Publishers GMBH. 1994.

This book is part of a series which covers new developments across the entire field of genetics; the series documents in an up to date fashion the molecular genetics of a range of disorders of the eye in humans and other animals.

In the book there is a very useful introductory section on principles and techniques which gives a genuinely lucid account that is clear even to a molecular genetic ignoramus such as I! The authors succeed in their aim to provide “a simple guide for the perplexed”. This is followed by a section on *Drosophila* retinal degeneration mutants which flies a basic science flag and is important in that *Drosophila* studies have been pivotal in the analysis of mutations affecting eye development.

The bulk of the book is largely a back to front (retina to anterior segment) layout of chapters. The authors are a mixture of clinical and molecular geneticists, ophthalmologists, and paediatric ophthalmologists; they take each subject and go into it in considerable

detail and authority with some chapters written only by geneticists concentrating purely on genetics and some chapters written in collaboration with clinicians.

The editing, as far as one can tell from the finished article, has been very good: although the book is a mixture of American English and English English style and spelling, there is nothing that would exasperate either an American or English reader. This cohesiveness could be the editing alone but I suspect that all the chapters were also well written in manuscript form. Despite the diverse nationalities of the authors and despite being written from different perspectives, the editors have made this a very consistent book, although naturally it is not all encompassing. Inevitably most of the chapters contain references mainly before 1992, but for nearly all readers this will not be important.

The editors have put together a really good glossary and the index is excellent.

Who will buy it? I expect that a lot of libraries, genetics, and ophthalmology departments will want it for its genetic content and it will be bought by a number of paediatric ophthalmologists and ophthalmic geneticists for their personal use.

In summary, even ophthalmic genetics can be a good read!

DAVID TAYLOR