However, there is little mention of the unpalatable fact that the majority of those whose child is handicapped could have taken no steps to avoid the tragedy and that this can happen to those who do everything possible before pregnancy.

In general, the author's enthusiasm to promote genetic knowledge is admirable but there are occasions when it becomes misleading. A table lists diseases to which recombinant DNA techniques can now be applied. This includes Charcot-Marie-Tooth disease and spinal muscular atrophy. The table correctly specifies that this applies only to the X linked varieties of these diseases but could cause frustration and disappointment for the families affected with the enormously more common autosomal varieties where there is as yet nothing on offer. More inexplicable, however, is a sentence in the section on indications for amniocentesis which states that if a woman is carrying twins there is a 1 in 6 risk that one will have a chromosome abnormality. Presumably some qualifying phrase has got lost, but this needs clarifying in a future edition.

Overall, however, the book gives a fair and accurate account of the current scene. It is aimed at the literate, non-medical, potential parent and does provide a readily understandable and readable description of these complex subjects. In the UK there are probably few parents who want so much background information but the book's scope is likely to be appreciated by nurse counsellors, interested laboratory workers, and general practitioners who want an easily digested update of this fast moving field.

A C BERRY

Medical Genetics: Principles and Practice

3rd edition. By James J Nora and F Clarke Fraser. (Pp 399; £21.69.) Philadelphia, London: Lea and Febiger. 1989.

This is a well established book which occupies the ground between the primers of medical genetics and larger textbooks. In the third edition the authors have taken the opportunity to reorganise and expand the material on molecular genetics into a separate chapter, thus providing a clear and up to date introduction to a fast changing field. Other material has been revised and less relevant material omitted, so that, overall, the volume maintains its former length.

In the first section, the principles of human heredity are discussed in terms of genetic disorders at the chromosomal, biochemical, and DNA levels.

There then follow descriptions of 100 or so selected Mendelian disorders, often chosen to illustrate a particular principle. This first section of the book also contains chapters on population genetics, the genetics of development and maldevelopment, and multifactorial inheritance.

The second section deals with selected topics such as prenatal diagnosis, teratology, immunogenetics, somatic cell genetics, cancer genetics, and behaviour genetics. As one might expect from these authors, the chapter on cardiovascular disease is comprehensive and the genetic aspects of ischaemic heart disease and the hyperlipidaemias are particularly well covered. Throughout, the authors draw attention to the ethical, legal, and moral issues inherent in the practice of medical genetics, summarising them in the excellent final chapter on genetic counselling.

The text is clear and concise and contains much factual information. Aspects such as molecular genetics are illustrated with clear line drawings, and the book contains a wealth of clinical photographs which are well chosen, although occasionally there is loss of clarity in the reproduction. The main strength of the book, in my view, is the authors' use of their extensive practical experience to bring to life the basic science so that the result is a textbook which is both stimulating and enjoyable to read.

The book is intended for medical and other students in the health sciences, and as an accompaniment to courses in human genetics for both graduate and postgraduate students. Paediatricians and other clinicians wishing to learn more about the subject will find it useful. It would be a valuable addition to every genetic clinic, particularly where there are geneticists and health workers in training.

CHRISTINE GARRETT

Annual Review of Genetics

Volume 22. Edited by A Campbell, B Baker, and I Herskovitz. (Pp 704; \$38.00.) Palo Alto: Annual Reviews Inc. 1988.

I have come to expect quality and value for money from Annual Reviews, and this volume certainly delivers both. There are 22 chapters averaging 30 pages and 100 references each, and as usual the topics range over the whole of genetics, from maize developmental genetics to insulin dependent diabetes. Six or eight of the reviews are directly relevant to clinical genetics.

If I wanted to be critical I would complain that the contents are a little predictable and the authors are all American. The predictability is no doubt the

price you pay for being authoritative. The authors are the leaders in their subjects, the people everybody asks to write reviews. So don't expect many surprises. But are there so few leaders outside the USA, indeed outside California? Only four of the 22 chapters have even one non-US author and not one works in Britain. Is that American insularity or fair comment on the dreadful state of British science?

Examples of authoritative but predictable chapters are Epstein on mechanisms of the effects of aneuploidy in mammals, and White and Lalouel on linked sets of genetic markers for human chromosomes. You couldn't fault the content of either chapter, but you may have seen it before. White and Lalouel have a nice way of saying things: "markers can be constructed with a combination of restriction enzymes and cloned DNA probes; the restriction enzymes detect variations in sequence that alter the length of the DNA restriction fragments, and the cloned probes reveal the electrophoretic behaviour of DNA fragments from individual loci". I shall remember that for lectures.

Worton and Thompson contribute a first rate chapter on the genetics of Duchenne muscular dystrophy. This will be ideal for introducing students to the world of pERT87, XJ2-3, and cDNA deletions, in conjunction with Emery's book for clinical aspects. Similarly, the review of Mendelian hyperphenylalaninaemia by Scriver, Kaufman, and Woo covers a lot of ground in an area which is developing quickly. Not everybody will agree with their suggestion that prenatal diagnosis rather than treatment is the best option for most families with PKU.

Several chapters are more useful for ideas than information. Glenys Thompson discusses HLA-disease associations and models for insulin dependent diabetes mellitus. Despite recent progress, diabetes remains enigmatic, but this chapter is an unusually clear introduction to the methods, and might help with other diseases. O'Brien, Seunanez, and Womack discuss mammalian genome organisation, a useful article for those who wish to keep half an eye on comparative gene maps. Solter covers the topical question of differential imprinting and expression of maternal and paternal genomes. He is almost entirely concerned with non-human mammals, since there is so little hard fact on imprinting in man. This chapter is a good review of the background against which theories of human imprinting must work.

As always these books are a pleasure to have. They are also notably good value for money at \$38.00 for a well printed and nicely bound book.

ANDREW P READ

Nucleic Acid Probes in Diagnosis of Human Genetic Diseases

Edited by Ann M Willey. (Pp 294; \$55.00.) New York: Alan R Liss. 1988.

These are the proceedings of the Seventeenth Annual Birth Defects Symposium held in Albany, New York, 29 to 30 September 1986. The first nine papers discuss the use of DNA probes for risk prediction in fragile X syndrome [fra(X)], Duchenne muscular dystrophy (DMD), cystic fibrosis (CF), Huntington's disease (HC), and the haemophilias, and in cancer detection. The final six papers discuss quality controls required to meet anticipated Federal regulation of commercial diagnostic molecular genetics laboratories.

Examples of different family structures suitable for predictive tests are given for each disease, although in some cases the pedigrees are theoretical. In haemophilias A and B, the advantage of deletion testing and of using polymorphic intragenic probes for carrier testing and prenatal diagnosis is stressed, and examples are given. For fra(X) it is suggested that the problem of linkage heterogeneity can be allowed for in each individual family so that transmitting males can be identified and indicate direction for further family tracing. However, in a rapidly changing field, the information in the papers on DMD and CF in particular suffers from the 18 to 24 month delay between presentation and publication. The value and use of cDNA probes in DMD and of linkage disequilibrium with close flanking markers in CF is not discussed, although these have now assumed major importance in predictive testing.

The paper on HC (Conneally *et al*) should be singled out for its quality and usefulness, both as a comprehensive clinical genetic review of this disease and for its discussion of the potential pitfalls in precipitous application of current technology at a rate outstripping preparatory ethical and psychosocial discussion. To a non-cancer geneticist the paper from Chaganti on 'Molecular genetics in cancer and leukemia', which outlines the current and potential use of DNA probes in cancer detection, diagnosis, and treatment evaluation, provides most interesting reading. Chaganti suggests that molecular methods are already more efficient than cytogenetic analysis for detecting residual disease after treatment.

Although the papers on laboratory regulation are very much directed to the North American system, the strict protocols suggested for ensuring quality control may have general applicability, especially if future commercialisation of services is anticipated. In particular, it is stressed that only probe-linkages thoroughly evaluated in research laboratories should be used for service.