Prenatal Diagnosis in Obstetric Practice. Edited by M. J. WHITTLE and J. M. CONNOR. Oxford: Blackwell Scientific Publications Ltd. 1989. 274 pages. £29.50. ISBN 0 632 01945 X.

Prenatal diagnosis began in the early 1950s when obstetricians showed that amniotic fluid could be safely removed in the second and third trimesters of pregnancy, and Rh-isoimmunization of the fetus detected by analysis of bile pigments. The discovery in 1965 that amniotic fluid cells were of fetal rather than maternal origin initiated an era of genetic analysis, first for chromosome disorders and then for an increasing range of inborn errors of metabolism. Prenatal diagnosis developed as a fruitful collaboration between obstetricians and medical geneticists. The former devised increasingly refined techniques for acquiring fetal tissues; safer amniocentesis, transcervical and transabdominal chorionic villus biopsy, and ultrasound-guided fetal tissue biopsy. Geneticists played their part by bringing the whole range of recombinant DNA technology to bear on the diagnosis of Mendelian disorders.

To some extent this balance has been upset by the new range of non-invasive physical methods of diagnosing fetal anomalies. The most powerful of these is high-resolution ultrasonar scan. Here the obstetrician works alone, his detecting system the VDU screen and his skills those of pattern recognition and accumulated experience in resolving the subtle features which might signal a fetal malformation. It is not an exact science nor yet a quantitative one, but it is of considerable importance in providing mothers with the opportunity to avoid the birth of a severely affected child.

Understandably, a book devoted to prenatal diagnosis in obstetric practice places strong emphasis on the achievements of ultrasound screening. There are separate chapters on the detection of malformations of the central nervous system, the gastrointestinal tract, the cardiovascular system and the renal tract, with excellent pictures and tables of incidences, associated abnormalities and empiric recurrence risks. Surprisingly, there is no discussion of either the principles or the technology of ultrasound. Other chapters, primarily orientated to the obstetrician, deal with fetal infections, exposure to teratogens, management of fetal anomaly, fetal pathology and prenatal therapy.

However, the obstetrician involved in prenatal diagnosis needs more than good ultrasound pictures. He must have detailed knowledge of cytogenetic methods for the diagnosis of chromosomal aberrations and of biochemical and DNA-based techniques for detecting both Mendelian and multifactorial abnormalities. The editors have approached this by compiling a series of appendices, which set out various fetal conditions and the techniques (ultrasound, biochemical, DNA or other) which may be used to diagnose them. Such lists are valuable to obstetricians who in the course of a working day may be confronted by a couple seeking prenatal diagnosis for a variety of rarely-seen conditions. But they need to be compiled, indexed and cross-referenced with skill and care if they are not to confuse. Cystic fibrosis, for example, is correctly listed as diagnosable by both biochemical and DNA methods, but there is a cross-reference to ultrasound which is not realised. Nor is there any guidance to the obstetrician as to which of the two techniques is preferable. I could find no mention of acetylcholinesterase in the entire book. This is one of two biochemical tests (the other being alphafetoprotein) which is now applied to virtually every amniotic fluid, whatever the indication for amniocentesis.

The first book on prenatal diagnosis to be published in the UK (A. E. H. Emery, *Antenatal Diagnosis of Genetic Disease*, Churchill Livingstone, 1973) was an edited volume from a group of contributors based in Edinburgh. This text is an edited volume from a group of contributors based in Glasgow. For several years Edinburgh buses have carried an advertisement saying 'Glasgows miles better'. Citizens of Scotland's capital city thought that they knew what this meant, and some even managed to join the acclamation which greeted the award to Glasgow of 'European City of Culture, 1990'. In this spirit the reviewer, an Edinburgh geneticist who contributed to Emery's 1973 volume, welcomes Whittle and Connor's book which though flawed in parts, is an important and novel contribution to the literature of prenatal diagnosis.

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Behavioral Genetics – a Primer, 2nd edn., by R. PLOMIN. J. C. DEFRIES and G. E. MCCLEARN. Oxford, England. W. H. Freeman. 1990. 455 pages. Hard cover. £25.95. ISBN 0 7167 2056 6.

This well written and interesting book is both ambitious and timely. It is ambitious because, in 14 chapters, it attempts to cover so much ground. It aims to introduce students to the analysis of behavioural traits using the techniques of quantitative genetics, and assumes that they have little or no previous knowledge of either Mendelian or molecular genetics. Thus five of the first seven chapters are devoted to Mendelism, chromosomes and molecular genetics including recombinant DNA technology. The coverage here is necessarily brief but the central theme of the book is adhered to by the use of examples which are not the usual ones for introductory texts. Waltzer, twirler and susceptibility to audiogenic seizures are three examples used to illustrate Mendelian genetics in mice; drop dead and wings-up are just two mutant types used to analyse behaviour and fate mapping in *Drosophila*. This should make the introductory

chapters interesting for those students who have some previous exposure to genetics. To complete the introductory section there are chapters on population and quantitative genetics. The latter introduces the basic methods underlying the analysis of continuously varying traits and stresses the power of these methods in analysing individual differences in behaviour. Ten propositions are provided which summarize the concepts involved in quantitative genetics and which serve to stress the interactive nature of genes and the environment.

The core of the book deals with the methods of dealing with human behavioural traits. Family, twin and adoption studies are considered in turn. The authors apply each of these study methods to the analysis of IQ and schizophrenia and, by use of these examples, illustrate how both a continuously varying trait and an all-or-nothing psychopathological condition are dealt with. Here the authors have been very careful to stress what can, and more importantly what cannot, be inferred from these studies. A final chapter surveys research in human behavioural genetics and covers a range of cognitive abilities, psychopathological conditions and personality traits.

This book is timely. It stresses the interactive nature of genes and environment in influencing behaviour; neither genes nor environment 'cause' a behavioural phenotype. This important message must be conveyed both to students and to the public in general if serious misunderstandings are not to arise. It is very probable that we will soon see the publication of much more research in which behavioural traits are associated with the possession of particular RFLPs. If this research is published with incorrect emphasis or inadequate discussion then inappropriate labels will be attached to individuals. We have already seen that once attached such labels can be indelible. For example, in the popular press the presence of the extra *Y* chromosome in *XYY* males has become associated with antisocial and criminal behaviour because this karyotype was initially reported as being frequent amongst inmates in mental-penal institutions. It is now known that the large majority of *XYY* males are law abiding individuals and lead normal lives. *XYY*s are also taller than average so that any survey which selects tall men for analysis is likely to reveal an increased incidence of this condition. It is possible therefore that a survey of the British police force (in which there is a minimum height qualification) would also reveal an increased incidence of *XYY*s. Had this been the survey initially conducted, then the presence of the extra *Y* would be correlated with laudable characteristics; a willingness to enforce the law and tackle unpleasant and dangerous issues. It is, unfortunately, all to easy to foresee genetics being misused in the future unless the interactive nature of genetics and the environment is conveyed to the general public. The possession of an RFLP associated with alcoholism does not label the holder 'alcoholic' any more than the possession of fair skin labels someone 'sunburnt'.

This book is carefully written, it is a balanced account and should be read by students of all types but especially by students of molecular genetics, for it is in this area that linkage of molecular markers to plastic behavioural phenotypes is likely to be reported. Any discoveries made in the molecular analysis of behaviour have to be published with great care if they are not to be misunderstood or misrepresented and this book should help to achieve this end.

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The Biology of Parasitism: a Molecular and Immunological Approach (*MBL Lectures in Biology, Vol. 9*) Edited by P. T. ENGLAND and A. SHUR. New York: Alan R. Liss Inc. 544 pages. Hard cover $90.00, ISBN 08451 2208 8. Soft cover $45.00, ISBN 0 8451 2209 6. Can be obtained in Europe from John Wiley and Sons Ltd, Baffins Lane, Chichester, Sussex PO19 1UD, England.

Parasitic diseases still cause an enormous amount of human suffering and economic loss, especially in the developing countries, and financial support for research is very inadequate. In 1977 about 80 times as much money was spent by the US government on cancer research, as on malaria, schistosomiasis, and other tropical diseases, which are estimated to infect 500 million people or more. Of course this is because parasitic diseases mainly concern poor people in poor countries, and the financial returns on sale of drugs or vaccines do not encourage pharmaceutical companies to spend the large sums required to develop the necessary drugs. Hence the study of parasitism on modern scientific lines has not received the attention it deserves. Much of the work supported by WHO and other international agencies tends to be orientated towards routine tests of drugs and epidemiological surveys, while basic biological research on parasites and parasitism is relatively neglected.

Current immunological and molecular research on a number of the more important protozoan and helminthic parasites is summed up in the 27 chapters of this book, written by participants at the annual courses on parasitism held at the Marine Biological Laboratory, Woods Hole, USA (somewhat surprisingly, in view of the location of the course, no mention is made of fish parasites).

The incidental scientific harvest from some of these studies is quite appreciable, as exemplified especially by the work on trypanosomes, which are haemoflagellate protozoa causing sleeping sickness in man and nagana in cattle. These organisms display an extraordinary range of variation in their surface antigens (VSG^s). As pointed out by M. J. Turner and J. E. Danelson, something like one tenth of the entire