Annual Review of Genetics

Volume 17. Edited by H L Roman, A Campbell, and L M Sandler. (Pp xii+537; figures + tables. US \$30.00.) Palo Alto, California: Annual Reviews Inc. 1983.

This volume follows the well established Annual Reviews formula of about fifteen reviews, averaging 30 pages each, scattered over the whole range of genetics. If you wanted to classify chapters as hits or misses on areas clinical geneticists need to know about, you would score only two direct hits, three or four near misses, and ten wides. The two hits are Warner and O'Brien on genetic defects in glycoprotein metabolism, and Charles Epstein and colleagues on recent developments in antenatal diagnosis. Warner and O'Brien's chapter is a well organised reminder of just how complex is the catabolism of glycoproteins; except for mucopolidoses II and III, defects in biosynthesis have yet to be described. Epstein *et al* attempt in 35 pages to cover everything from chromosome instability syndromes and the fragile X, through DNA studies of mutant genes and linked polymorphisms, to fetal echocardiography and serum AFP screening. I feel it might have been wiser to omit many of the details, exciting though they are, in favour of broader perspectives.

Concentrating on the direct hits probably misrepresents the appeal of these reviews. They are mostly not detailed enough for people seeking out the latest in their own specialty (there isn't a single pedigree or Southern blot in the whole book). The real pleasure is eavesdropping on somebody else's patch, and hopefully picking up useful titbits on the way. From this point of view I particularly enjoyed Gartler and Riggs on mammalian X chromosome inactivation, and Risser *et al* on endogenous mouse leukaemia viruses. The chapter by Rickards on the orientation behaviour of chromosome multiples in interchange heterozygotes was useful in a negative way: the detailed studies by plant cytogeneticists do not reveal the key to predicting risks for human carriers of balanced translocations. Harris's chapter on the use of monoclonal antibodies in enzyme genetics contains a detailed review of his group's work on alkaline phosphatases, good for anyone who thinks DNA sequencing is the only method for studying multigene families.

What would you use the Annual Reviews of Genetics for? Probably not for keeping up with developments in your own specialty. Collectively the volumes make up a part-work textbook of genetics; there seems to be a policy of avoiding the very fast moving areas of DNA research where reviews are obsolete before the ink is dry, and this enhances its usefulness as a textbook. But for me, its

main appeal is as a book in my briefcase rather than on the library shelf, something to dip into in the odd spare hour. Whether you like it or not probably depends on whether you have the taste for cocktails.

ANDREW P READ

Utilization of Mammalian Specific Locus Studies in Hazard Evaluation and Estimation of Genetic Risk Environmental Science Research Volume 28. Edited by Frederick J de Serres and William Sheridan. (Pp ix + 341; figures + tables. \$45.) New York, London: Plenum Press. 1983.

The potential mutagenic hazard of many chemicals has been identified from studies on lower organisms. Demonstrable effects in many instances have also been obtained in mammalian studies, yet there remains a large gap between such findings and realistic assessment of genetic risk in man. This book contains the proceedings of a workshop devoted to the problem of filling this gap. A review of the situation is laid out in the introduction which incisively defines the areas of research in need of development and almost previews the subject matter subsequently presented by an eminent group of specialists in the field. The early chapters deal with methodologies for monitoring human populations: existing methods are critically analysed, problems of interpretation and recent developments are appraised. A further six chapters present experimental data obtained with mice using methods ranging from the well-established specific locus mutation test and its biochemical equivalents to the promising dominant cataract and skeletal abnormalities tests; newer methodologies for detecting recessive lethal and deleterious mutations are also described. The relative merits of the methods and their use for the risk assessment are, for the most part, clearly indicated. New approaches to mutation detection are also suggested. There are three detailed and informative chapters on the nature of the mutations induced which provide data of considerable genetic interest. A further chapter highlights the range of factors which can effect the mutation response in mammals, at least when the mutational events are chromosomal in nature. In another, there is a profound, in depth analysis of methods for extrapolating experimental data to man. The final chapters suggest directions for future research.

This book provides much information and expert opinion on the problems of assessing the genetic