more information than activity studies, and since close evolutionary homology between genes is neither a necessary nor a sufficient condition for shared enzymic activities of their products.

J. F. Y. BROOKFIELD
Department of Genetics
University of Nottingham

Isozymes: Current topics in biological and medical research. Volume 16. Mario C. Rattazzi, John G. Scandalios & Gregory S. Whitt (eds). Alan R. Liss, Inc., New York. 1987. Pp. xiii + 290. Price £41.00. ISBN 08451 0256 6.

This volume in the Isozymes series is the third of three volumes which constitute the proceedings of the 5th International Congress on Isozymes held in Kos, Greece, in May 1986. The editors and publishers are to be congratulated on the speedy appearance of these volumes. Too often rapid publication of proceedings results in poor quality printing and reproduction: this is happily not the case here and the standard of reproduction is very high. An index is supplied and the contents of other volumes in the series are also listed.

A total of 15 articles are included, covering a very diverse selection of topics under the general umbrella of isozyme studies. Possibly the two articles likely to be of greatest general interest are those of Whitehouse and Hopkinson on sensitive techniques for the detection of genetic variation in human isozymes, which proposes that immunoblotting of electrophoretic gels overcomes some of the limitations of standard staining methods in the detection of isozymes, and Nevo on the uses of isozymes for studying plant genetic resources.

Other topics covered are baboon alcohol dehydrogenase (Holmes and VandeBerg), human aldehyde dehydrogenase (Agarwal and Goedde), modified β-hexosaminidase isozymes and lysosomal storage disease (Rattazzi and colleagues), human alkaline phosphatases (Moss), adenylate kinase isozymes in normal and Duchenne muscular dystrophy patients (Hamada and colleagues), isozymes as host-donor tracers following bone marrow transplantation (Meera Khan and colleagues), isozymes as disease resistance markers in plants (McMillin and Allan), heterosis and isozyme heterozygosity in maize (Tsaftaris & Efthimiadis), malate dehydrogenase in watermelon cotyledons (Gietl and Hock), lactate dehydrogenase and cytosolic pH of plant cells (Davies), heavy metals and isozyme expression in *Silene* (Verkleij, Lolkema, and Ernst), sugar phosphate metabolising isozymes in plants (Schnarrenberger), and plant peroxidases (van Huystee).

The range of technique and methods covered in these papers is impressive, and although restriction enzyme analysis of DNA is now the fashion, it is clear that the study of isozymes still has much to offer in many fields of biological research. I would, however, hesitate to recommend this book for private purchase by anyone other than rich bibliophiles. The very specialised nature of many of the contributions means that few researchers using isozymes would find all the articles useful, although all researchers would find some articles of interest. This, along with the other volumes in the Isozymes series, is a volume for Departmental and University libraries.

ROBERT D. WARD
Department of Human Sciences
Loughborough University of Technology

Molecular biology of *Homo sapiens*. Volume II (two book set) Cold Spring Harbor Symposia on Quantitative Biology. Cold Spring Harbor Laboratory, Cold Spring Harbor, New York. 1987. Pp. xxiii + 1229. Price $160.00 US HB; $80.00 US PB. ISBN 0 87969 052 6 HB; 0 87969 053 4 PB.

This two volume set, comprising over 120 papers spanning some 1200 pages, is devoted to the proceedings of the 51st Cold Spring Harbor Symposium. The only previous symposium to be devoted specifically to *Homo sapiens* was the volume published in 1964 which dealt with Human Genetics and covered population genetics, somatic cell hybrids and human proteins. Since that time we have seen remarkable progress in the molecular field and this volume provides the current synopsis.

The contents are divided into seven major topics, four covered in Part 1 and the other three in Part 2. Part 1 commences with an informative/appealing introduction from W. F. Bodmer (appealing since it makes a case for Project 2000, the complete characterization of the human genome by the end of this century). There follows sections on the human gene map, genetic diagnosis and the development of new methods for the determination of single gene disorders, human molecular evolution and finally the use of recombinant DNA technology in the generation of growth, clotting and anti-clotting factors and anti-cancer agents.

The second Part covers receptors, human cancer genes, including a fine section on oncogenes and cancer, and the prospects of gene therapy. The volume ends with a summary of the meeting by Caskey. In addition there is an eighty page appendix collated by McKusick which provides current information about the human gene map.

There can be no doubt that this volume will provide a useful reference not only for workers in these areas but also for those keen to keep up with developments. Of course most of the material has been published elsewhere, but its appearance in review form in a single volume underlines the tremendous strides taken as well as the immense scope of this whole field for the future of human biology and medicine. Of course, in collected volumes it is not always possible to provide a complete overview and there are two obvious omissions; hardly

any mention is made of polygenic conditions with the exception of heart disease but what is more surprising is the absence of papers dealing with the prenatal diagnosis of single gene disorders.

These criticisms should not detract from this excellent volume. It achieves what the organisers hoped—providing the most up to date account of human molecular biology currently available.

NICK MASCIE-TAYLOR
Department of Biological Anthropology
University of Cambridge

Molecular biology of DNA repair. A. Collins, R. T. Johnson and J. M. Boyle (eds). The Company of Biologists Limited, Cambridge. 1987. Pp. 353. Price £35.00, $70.00 US. ISBN 0 948601 06X.

The involvement of DNA damage as an early step in carcinogenesis and the existence of several multisystem human genetic disorders associated with defects in DNA repairs or DNA processing, attest to the fundamental importance of DNA repair in maintaining the integrity of cell and organisms. The symptoms of genetic disorders such as xeroderma pigmentosum, ataxia-telangiectasia and Fanconi's anaemia demonstrate that DNA repair repair enzymes are involved not only in the avoidance of carcinogenesis but also in many aspects of differentiation and development.

Molecular Biology of DNA Repair is a book based on the proceedings of an international conference held in Manchester in March 1986. As such it suffers from all the shortcomings of conference proceedings, of which I admit to being in general a long-standing opponent. A request for a paper to be published in such proceedings often results either in the prevention of the publication of the same work in a referenced journal or entails the writing of such a paper in a rather vague and often unhelpful way. The resulting proceedings are almost inevitably a hotchpotch of articles, some containing latest results, others being reviews, or short summaries. The editors must then put them all together with some semblance of coherence. The division of the book into DNA repair, correction of repair defects by DNA transfection, mechanisms of recovery from DNA damage, control of DNA repair processes and mutagenesis appears quite artificial, only the section on correction by transfection containing articles which are clearly on this topic.

Notwithstanding these general criticisms, most of the individual articles are very good, especially those which contain mini-reviews of work from the authors' laboratories over the last few years. These include articles by Hoeijmakers on the correction of the defect in xeroderma pigmentosum by microinjection of gene products or cell extracts and the cloning and characterisation of the ERCC-1 human DNA repair gene, by Smith on repair in specific sequences, by Mullenders on localisation of excision repair, by Johnson on the effect of inhibitors and stress on DNA repair, and by Day on the role of 6-methylguanine in human cells. These are comprehensive articles containing many useful references.

The book commences with a well-written overview of excision repair by Friedberg. A further particularly useful review is by two of the editors, Collins and Johnson, who have undertaken the commendable task of collating existing information on all mammalian mutant cell lines. They provide comprehensive lists of these mutants together with brief descriptions of their properties. Their article is a valuable source of information which will spare their readers much tedious searching of the literature.

As a supplement to Journal of Cell Science, this book will be found on the shelves of any library which subscribes to the journal. Although I doubt if it will find too many individual purchasers, laboratories actively involved in research on DNA repair will find it a useful book to have on their reference shelves.

A. R. LEHMANN
MRC Cell Mutation Unit
Sussex University

Plasmids: a practical approach. K. G. Hardy (ed.). IRL Press Oxford, Washington DC. 1987. Pp. xi + 192. Price £15.50, $28.00 US PB; £25.00, $45.00 US HB. ISBN 0947946 81 0 PB; 0 947946 78 0 HB.

There was a time when bacterial plasmids were little more than a biological curiosity, studied by a small number of devoted, prokaryote biologists. Times have changed. Today, in the "probe it, clone it, sequence it" hothouse of molecular biology there are few workers who do not at some time make use of plasmids, although many are woefully ignorant about the vectors which they use. This book in the Practical Approach series from IRL Press could help to dispel their ignorance but, alas, is more likely to be read by those who study plasmids for their own sake.

In putting together this book, Kimber Hardy has chosen a collection of self-contained chapters dealing with particular aspects of plasmid biology. In each chapter, the author gives explicit descriptions of the techniques which he employs. In the first chapter, Hardy discusses various methods for the purification of plasmid DNA. In the second, Thomas describes experimental approaches to the investigation of replication and copy number control and in the third chapter, Bergquist looks at plasmid incompatibility (a phenomenon much beloved of plasmid biologists but an impenetrable mystery to many outside the brotherhood). These chapters are a mine of valuable technical information, especially for those workers setting out to investigate plasmids in poorly-characterised organisms.

Later chapters venture into the realms of transposon mutagenesis in gram-positive organisms (Youngman) and the study of colicins and their plasmids (Pugsley &