

complex is known it is clear from the contribution by Jen-Jacobson et al. that it is still not possible to define precisely the importance of various interactions. Similarly, a great deal is known about the interactions of DNase I with DNA and how binding causes the DNA to bend away from the protein, thereby widening the minor groove. Yet we are still not in a position to predict the rates of reaction at most individual sites.

The publishers obviously had some trouble with Chapter 2 as there is a sheet of errata to go with it. This is a pity for such an expensive little volume but did not detract from the enjoyment I got from reading this book, and I would recommend it strongly to those interested in the fundamental problems of nucleic acid-protein interactions.

Roger L.P. Adams

DNA Fingerprinting: Approaches and Application; T. Burke, G. Dolf, A.J. Jeffreys and R. Wolff; Birkhäuser Verlag; Basel, 1991; x + 400 pages; SFr. 168.00, DM 198.00, ISBN 3-7643-2562-3.

This is a collection of papers delivered at an International Symposium on DNA Fingerprinting in Bern in 1990.

For those who think of DNA fingerprinting mainly in terms of its forensic applications, this compilation will provide a stimulating insight into the many and varied ways in which this technology can be applied to answer many fundamental questions in biology.

Appropriately the first article, by Alec Jeffreys, deals with recent developments, largely in the area of forensic work, and concludes that most of the original problems associated with this application have been solved. However, difficulties associated with 'band shift' are dismissed as readily identifiable and correctable but unfortunately no details are provided.

There is an interesting contribution on synthetic oligonucleotides, comprising simple repeat motifs, in which a wide range of applications are described, including forensic uses, where such probes appear to offer some advantages over more conventional probes. Naturally occurring DNA sequences with simple repeat motifs are the subject of another section where their successful application to the identification of protozoan parasites is reported, a hitherto technically difficult area.

Several sections deal with various aspects of population genetics, about which some practitioners might be surprised to learn that, although specific bands can not be associated with particular loci and alleles can not be identified by the use of multilocus probes, it is still possible to obtain useful population data, such as the level of homozygosity, effective population size, degree of relatedness and mutation rates, through the use of such probes.

By contrast, the use of single locus probes allows the identification of individual alleles, but with VNTR loci this in itself

raises problems since the sheer number of alleles at these loci precludes the detection of all possible genotypes. However, by the use of the appropriate statistic, conformity with Hardy Weinberg expectations and independence of allele segregation may be examined without recourse to the collection and analysis of an infinitely large population sample. In another type of population study, fingerprinting techniques have allowed monitoring of the migration of the Peregrine Falcon through the detection of sex-linked, species-specific DNA fragments!

An important theme in many of the contributions is the use of probes for the detection of VNTR loci for use as linkage markers. Human DNA probes have been used to detect such loci in mice to provide linkage markers for genes important in disease susceptibility in models of human genetic disease. Several papers describe the exploitation of VNTR locus markers for genes that control quantitative characteristics in studies on genotype/environmental interactions and in breeding experiments in species as diverse as chicken, salmon and trout.

The collection includes several chapters which describe investigations into the possible molecular mechanisms that generate VNTR loci, and further contributions consider other evolutionary aspects such as the effects of selection and genetic drift on such loci.

Medical aspects are perhaps underrepresented but chapters describing the application of fingerprinting techniques in the area of quality control cultured cell banks and in the detection of somatic mutations in cancer and other human diseases are noteworthy.

N. Spencer

Interferons: Mechanisms of Action and Role in Cancer Therapy; Edited by D. Crowther; Springer-Verlag; Berlin, Heidelberg, New York, 1991; 63 pages, DM 72.00, ISBN 3-540-54302-3.

It is now thirty five years since the discovery of interferon, and over a decade since the interferons began to be used clinically in cancer therapy. During this period we have learned a great deal about what the interferons do and how they work, and we understand even more about the molecular basis of cancer. In neither case, however, is our knowledge sufficient to give more than an inkling of the basis for the occasional anti-tumour actions

of the interferons; more disappointingly, we do not understand much about why many human cancers (including the commonest solid tumours) are largely refractory to interferon treatment.

This short monograph is a useful attempt to summarize current knowledge of the basic biology of the interferon system and the application of the interferons as agents in the therapy of a number of different types of tumour. It has been produced as one of the