thrown in to plug the gaps) covers almost every branch of biology which uses PCR and similar new tricks. An alternative view was expressed by a colleague who said to me 'molecular ecology is surely a contradiction in terms'. Many of the topics in the book have little or nothing to do with ecology, e.g. molecular systematics, development and genome organization, but almost every topic can be squeezed under the umbrella of Evolution. The book contains many excellent articles, but the price is very high for our fund-starved academic libraries and could have been substantially reduced by deleting those articles whose inclusion could be questioned. Nevertheless, I hope the book will find a home in many of these libraries, as its 'ecological' slant should have considerable appeal.

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DNA–Protein Interactions: Principles and Protocols, Methods in Molecular Biology, vol. 30. Edited by G. G. KNEALE. Humana Press, NJ, USA. 1994. 427 pages. Price £49. ISBN 0 89603 256 6.

Breakthroughs in our understanding of the molecular basis of the control of gene expression, nucleic acid replication and recombination have been made possible by the continuing development of sophisticated techniques for the analysis of protein–nucleic acid interactions. In this complex area of investigation, clear resolution of these interactions can be difficult to achieve and results may vary depending on the methods employed. Very often, complementary experimental techniques need to be used before a clear picture emerges.

DNA–Protein Interactions: Principles and Protocols is a welcome addition to the highly successful *Methods in Molecular Biology* series, with each of its 32 chapters achieving the required aim of providing complete experimental protocols that can be readily understood and used by relative newcomes to the field. The early chapters describe a variety of related methods which are used to investigate 'protection' of DNA sites and 'interference' with DNA–protein interactions. Analyses of both DNA base contact and contact with the phosphate groups of the DNA backbone are described. A series of chapters devoted to studies of the protein component of a complex includes the use of site-directed mutagenesis as a prerequisite for determining the functional requirements for particular amino acid residues. This is followed by protocols for cross-linking DNA to protein molecules, and for determining DNA-binding affinities. A number of spectroscopic techniques are then described, with the final chapters including functional assays for protein activities (such as the assay of restriction enzyme and transcriptional factor activities).

Inevitably, there is a degree of overlap between the introductory sections of related chapters, but the book is none the worse for this. As in all the volumes of this series, the protocols are clearly laid out, are complemented by clear diagrams, and there are many tips and hints to guide the uninitiated and to help when things go wrong. In conclusion I found this to be a welcome addition to the series, and would recommend it to those currently working in this rapidly growing area of research.

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Protocols for Gene Analysis, Methods in Molecular Biology, vol. 31. Edited by A. J. HARWOOD. Humana Press, NJ, USA. 1994. 411 pages. Price $59.50. ISBN 0 89603 258 2.

Now that methods for gene cloning, DNA sequencing and DNA amplification (including that by the polymerase chain reaction, PCR) are well-established and relatively straightforward, attention has shifted to the development of procedures for the analysis of genes starting at the DNA level.

Protocols for Gene Analysis is divided into seven parts. The first part describes a set of basic recombinant techniques and is intended as an addition to techniques covered in earlier volumes of this well-established series. Part 2 is devoted to the *in vitro* mutagenesis technology which enables studies to be made of gene expression or gene product function. Part 3 covers a number of electrophoresis and labelling techniques for the elucidation of genomic structure, while Part 4 describes technical innovations which allow for the rapid detection of DNA sequence variations within a population. The latter part includes a protocol for the direct sequencing of PCR products. Methods for the study of gene expression in general, and for the quantification of transcription rates and identification of transcription start-sites are among the topics covered in Part 5. Part 6 describes the identification of protein-binding DNA sequences and how the genes of DNA-binding proteins may be identified and isolated, while the final part describes novel methods for recombinant protein expression and purification from cloned DNA, and the identification of proteins through their association with this DNA.

Each chapter is clearly and succinctly written and begins with a short introduction. Extensive descriptions of the materials required and the methods employed are followed by detailed notes which cover everything from the safe handling of reagents to technique variation and suggestions for trouble-shooting. Clear diagrams are to be found throughout.

Overall, this book is a valuable addition to any

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laboratory actively engaged in studies of genome structure, sequence variation, gene expression or protein function. The editor and the many contributors are to be congratulated on the production of a well-presented, well-referenced and user-friendly laboratory manual.

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