

publish their best quality primary results in refereed journals. However, the statistical analyses are clearly set out and explained in the context of the ecology of the plant, bacterial and fungal systems examined.

A number of minor and not so minor irritations were encountered on reading the book. For example, although it is relatively trivial, the specific names of some microorganisms such as *Thermomonospora chromogenum* and *Cladosporium* are incorrectly spelled. More importantly, statisticians and modellers should not forget the ultimate sources of their primary data — I was surprised to find experimental results in one chapter that had been extensively processed, but whose primary experimental source had not been acknowledged.

Apart from the chapters on genetic exchange and the appendix on mobile genetic elements, the book will be of passing interest only to most card-carrying geneticists. There is more here for modellers, soil microbiologists and ecologists, who will find some of the statistical treatments useful. This is probably a book of most use in the library of the specialist in this area, or of those interested in agricultural sciences as opposed to mainstream genetics.

JON SAUNDERS
Department of Genetics and Microbiology
Life Sciences Building
The University of Liverpool
PO Box 147
Liverpool L69 3BX
 U.K.

DNA Sequencing: The Basics. T. A. Brown. IRL Press at Oxford University Press, Oxford. 1994. Pp. 101. Price £9.99, paperback. ISBN 0 19 963421 1.

To the novice, DNA sequencing gels that yield more than three hundred base-pairs of unambiguous sequence are a cause for celebration. Too often such experiments are blighted by technical shortcomings, and provide only one or two hundred base pairs of information. Yet with experience, one can consistently obtain beautiful sequence data.

The transition from novice to experienced sequencer is rapidly achieved if the investigator understands how DNA sequencing works, and learns to diagnose problems causing sub-optimal results. *DNA Sequencing: The Basics* is expressly written to facilitate this transition. It explains DNA sequen-

cing from first principles, and guides the beginner through the standard sequencing protocols, explaining the significance of each step along the way.

The book has five chapters. The first chapter outlines current methods used to sequence DNA. The next three chapters, the heart of the book, focus on Sanger's dideoxy mediated chain termination method. They explain how template DNA is prepared, how the strand synthesis reactions are carried out, and how sequencing gels are run and the sequence read from autoradiographs. The chapter on strand synthesis is particularly informative. It details how the properties of different DNA polymerases affect sequencing reactions, and describes various methods used to label terminated chains. It also explains clearly how nucleotide concentrations and reaction incubation periods can be manipulated to obtain sequence from regions of the template which are at different distances from the primer binding site. The final chapter describes Maxam-Gilbert chemical degradation sequencing, and lists some advantages of chemical degradation sequencing over the more commonly employed chain termination method.

DNA Sequencing: the basics is well written: it is short and easy to read. The author makes abundant and fruitful use of simple figures to outline procedures and to describe graphically what is happening at the molecular level at each step of the protocol. Primary data are provided to show the results of successful experiments, and to illustrate problems frequently encountered in sequencing. The book also has a comprehensive glossary, an index, and short lists of references at the end of each chapter. Readers expecting protocols will be disappointed: *DNA Sequencing* does not provide sequencing protocols.

Inevitably, the contents of this book overlap significantly with information found in standard molecular biology laboratory manuals. The principal advantage of *DNA Sequencing* over these manuals is that it is far more lucidly written. Because of its simplicity, *DNA Sequencing* will appeal more to scientists about to begin sequencing than to 'old hands'. However, even experienced sequencers will benefit from an afternoon spent reading it. In short, this book is likely to be a useful reference in laboratories that carry out sequencing.

MARIO DE BONO
MRC Laboratory of Molecular Biology
Hills Road
Cambridge CB2 2QH
 U.K.