PREFACE TO VOLUME II OF THE SECOND EDITION

In the eight years since publication of *Molecular Biology Labfax* there has been a vast proliferation of molecular biology techniques. To reflect this growth the second edition therefore differs from the first in being split into *Volume 1: Recombinant DNA* and *Volume 2: Gene Analysis*. The *Gene Analysis* volume covers the information that is relevant to the main techniques used in the study of DNA. Several of the chapters – for example, on nucleic acid labelling and agarose gel electrophoresis – are direct descendants of chapters in the first edition and are organized along the same lines; other chapters – notably the ones on DNA sequencing and PCR – are entirely new. As with the *Recombinant DNA* volume, I have tried to present the data in a more accessible manner, avoiding many of the design errors that I made in the first edition where too many data were squeezed into too small a space. I hope that the result is a more user friendly book.

I would like to thank Douglas Robinson and Gayle Lafleche of FMC Corporation for providing data for the chapter on agarose gel electrophoresis, and I am also grateful to various other companies who have allowed me to use information from their books and catalogues: these are acknowledged in full at the relevant places in the book.

Most of this book was written in a guesthouse in a small town in the Val Camonica, northern Italy. I would like to thank the owners and staff of the Albergo Belvedere, Borno, for their hospitality and splendid cooking, and Professor Francesco Fedele of the University of Naples for arranging my visit.

T.A. Brown

PREFACE TO VOLUME I OF THE FIRST EDITION

There is nothing new under the sun and so it would be foolhardy to suggest that *Molecular Biology Labfax* is an entirely new departure in scientific publishing. It is, however, different from the existing cloning manuals in that it is designed as a companion rather than a guide for molecular biology research. *Molecular Biology Labfax* does not contain procedures or methodology but instead is a detailed compendium of the essential information – on genotypes, reagents, enzymes, reaction conditions, cloning vectors and suchlike – that is needed to plan and carry out molecular biology research. Some of this information is already available in cloning manuals, catalogues and possibly on pieces of paper kept somewhere safe, but tracking down exactly what you need to know takes time and can be a frustrating experience. With molecular biology becoming an increasingly sophisticated science, an acute need has arisen for a databook to complement the traditional cloning manuals. *Molecular Biology Labfax* is intended to meet this need.

To be useful, the coverage of *Molecular Biology Labfax* has to be right. The scope of the book is of necessity a compromise between a desire to include everything and a need to keep within a reasonable size limit. The reader will expect to find extensive details of *Escherichia coli* genotypes and genetic markers, restriction enzymes, DNA and RNA modifying enzymes, chemicals and reagents, cloning vectors, restriction fragment patterns and suchlike. These topics are covered in as comprehensive a way as possible, so for instance in Chapter 4 all the known restriction enzymes are described along with reaction conditions for all the commercially available ones. A few items that might be expected are not included on the basis that they are of specialist interest, an example being cloning vectors for eukaryotes. Topics such as these will be covered by future editions in the Labfax series. Although experimental protocols are not given, certain key information is provided for subjects such as the growth of *E. coli* strains, use of radiochemicals, electrophoresis of nucleic acids and hybridization analysis. These topics are of widespread importance in molecular biology procedures and so warrant sections of their own. Readers using other standard techniques will find their needs met by the data presented throughout the book. For instance, the DNA sequencer will find data on dideoxynucleotides and Maxam–Gilbert reagents (Chapter 2), radionucleotides and detection methods (Chapter 3), enzymes for chain termination sequencing (Chapter 5), M13 cloning vectors (Chapter 6), and electrophoresis systems (Chapter 8), as well as details of the genetic code and codon usages for interpretation of sequence information (Chapter 7).

A second essential requirement is accuracy. Wherever possible I have double-checked items that I have had doubts about, going back to the original publications if necessary. In a few cases the literature contains annoying contradictions that I have been unable to resolve, with *E. coli* genotypes providing some of the biggest headaches. The relevant entries carry a footnote or other warning to alert the reader and I welcome enlightenment if anyone knows any of the answers.

Without the help of a number of people *Molecular Biology Labfax* would never have been completed. I am very grateful to Rich Roberts, Toshimichi Ikemura and Michael McClelland for their contributions, as well as GIBCO–BRL, Pharmacia, Promega, USB, Clontech, Strategene and FMC for providing artwork for the cloning vectors and electrophoresis sections. I would like to give a general thank-you to the various colleagues and friends who helped me out with points here and there. Half-way through the enterprise it became clear that you need to be slightly unbalanced to compile a databook: I became even more worried on the occasions when I thought I was actually enjoying the experience. Because of this I must thank my wife, Keri, who made sure I survived to tell the tale.

T.A. Brown