

Preface

The underlying philosophy of the First Edition was that the teaching of genetics should begin with DNA rather than Mendel. Nothing has happened during the intervening 3 years to change my mind about the molecular approach: if anything I am more convinced than ever that an initial understanding of the gene as a piece of DNA provides the student with the confidence needed to deal successfully with the challenges and subtleties of the more 'classical' aspects of genetics. The Second Edition therefore retains the molecular approach, although with two important differences. The first is that my own confidence has been boosted to the extent that I have now taken the narrative slightly further, in an attempt to provide a more thorough introduction for degree programmes in which genetics will form a large part of the subsequent coursework. To this end the existing sections on gene analysis have been expanded and additional topics such as population genetics and evolution brought in at appropriate places. These changes make the book more complete in its coverage and should not detract from its popularity as a concise introductory text for the genetics component of general biology courses.

The second difference is that I have given eukaryotes rather more emphasis, especially in Part One. There has always been a temptation to base an introductory series of molecular biology lectures solely on *E. coli*, on the grounds that eukaryotes are more 'complicated' and that many of the key features of eukaryotic molecular biology are still poorly understood. The fact is that many of today's students are attracted to genetics through their awareness of cancer, AIDS and other 'eukaryotic' topics. This does not mean that we should abandon prokaryotes altogether and just teach medical genetics, but it does argue for eukaryotes, man in particular, being brought in at an early stage. The important thing is to recognize the value of prokaryotes in providing a less complicated introduction to a topic, such as transcription or DNA replication, but to draw out the unifying themes between prokaryotic and eukaryotic molecular biology so that the student can see how the study of *E. coli* has led to research in today's 'hot' topics. I have attempted to do this by giving rather more detail on eukaryotic events throughout the book, and by writing an entirely new chapter on the molecular genetics of man.

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