dental research. Three distinct themes, den- tal hard tissues, oral microbiology, and salivary, are covered. Four chapters relate to the molecular biology of the dental hard tissues. These include genetic control of the dentition, enamel proteins, and immunoloca- lisation of protein genes and their expression, and, lastly, dental mesenchyme and the expression of molecules there- in. One chapter is devoted to the molecular genetics of oral bacteria and the microbial etiology of dental caries and periodontal diseases. The remaining section deals with salivary composition, with separate chapters on salivary mucins, salivary proteins, and the proteins of saliva.

Chapters are contributed by distinguished researchers in each field. Some chapters appear somewhat subjective but this reflects the relative con- tribution of the author(s) to their subject of interest. The comprehensive list of references at the end of each chapter will provide a valuable source of further reading for those seeking to further their knowledge of the field. As with most books in this series, the editor has welcomed for bringing together in one volume current thinking regarding molecular biology as applied to the study of oral and dental structures and issues.

M J ALDRED


Over the last 20 years the purely descriptive field of cytogenetics, and the reductionist, analytical field of molecular biology have steadily approached each other until it is almost time for them to celebrate their wedding. Although it is not yet possible to con- struct a detailed model of chromosome orga- nisation, the ways in which genes are organised in chromosomes and chromosomes in nuclei are beginning to be well understood. The present volume makes an appropriate appearance. However, the value of this book as a contribution to this important field is more debatable.

To some extent this is a book designed to expect a series of detailed descriptions and evaluations of tech- niques at the leading edge of chromosome research, whereas what we find is a mixture of review articles (some quite excellent) and technical chapters, with the majority of the latter lacking sufficient detail to make them an adequate guide to implementing the tech- niques described. There is also a problem (presumably arising from the delay between the submission of the manuscripts and publica- tion) with material becoming outdated. Very few of the references cited by most of the authors are later than 1989, and in such a rapidly changing field, this is usually too long ago!

In a volume of such diverse character, I feel that the best way to give an idea of the value of the book is to run briefly through the chapters, with a brief description and com- ment on each. The book is divided into three sections: Molecular Techniques, Cytogenetic and Linkage Analysis, and Cel- lular Techniques respectively.

The first section begins with a review of 'Molecular diagnostics' (Summar and Phil- lips), which is detailed and well written, my only criticism being that mentioned above, that there is no reference more recent than 1989. The next is a chapter on 'Cloning and analysis of large DNA mol- ecules' (Scherer and Tsiu). This is primarily concerned with YAC technology and the physical mapping of probes and the first analysis of a human tumor using PFGE (Pulsed-field gel electrophoresis). There is thorough coverage of this important area, but, al- though protocols are given, they tend to lack the precise details necessary to translate them into new and successful laboratory procedures. The next chapter is a detailed report of a single piece of work involving the 'Molecular analysis of a single chromosome sub-band' (Yunis). While this is an excellent chapter for the work by molecular cytogenetics, it is not sufficiently universal for the reader to be able to apply it to similar problems in a different system. Chapter 4 describes a method for purifying DNA frag- ments by immobilised oligonucleotide probes as a stage in high efficiency cloning (Wada, Tsuri, and Suyama). Although the techniques are fairly well described, again I feel that protocols are not sufficiently detailed to be useful as laboratory guides without further amplification. Chapter 5 covers 'In situ hybridisation' (Nanda, Schmid, and Epplen). This is an excellent chapter, reporting a new approach in good and adequate detail. Chapter 6, on the 'Analysis of flow-sorted chromosomes' (Shimizu and Minoshima) has useful proto- cols, but limited application owing to the use of a single fluorochrome and laser, with the limited resolution available with this system. Again, the most recent references are 1989.

The last chapter in this section covers 'Pulsed-field gel electrophoresis', and I am grateful to John Maule for reading it and providing me with his comments. It is not a review of the entire field, but this reflects the difficulty of covering the wide variety of techniques that have been developed, their application to a variety of problems, and the different hybridisation methods that have been employed. This chapter is not a detailed review of the field, but gives a good overview of the techniques that are available for the study of large segments of DNA. The review is not comprehensive, but it is certainly a good starting point for those interested in the subject.

Chapter 9 is a comprehensive survey of the subject, and is a good starting point for those interested in the subject. It is not a detailed review of the entire field, but this reflects the difficulty of covering the wide variety of techniques that have been developed, their application to a variety of problems, and the different hybridisation methods that have been employed. This chapter is not a detailed review of the field, but gives a good overview of the techniques that are available for the study of large segments of DNA. The review is not comprehensive, but it is certainly a good starting point for those interested in the subject.

In summary, this volume may have a mis- leading title, as the majority of the contribu- tors do not provide much more than an overview of the field covered by their titles, and few of those chapters which do provide practical details do so in sufficient detail for the book to be a useful manual. To whom, then, will it ap- peal, because, make no mistake, this is a good and worthwhile book! I find this a very difficult question to answer. It is not, because of the delay between writing and publication, a useful introduction to the field, yet it is the sort of book that departments of genetics and cell biology ought to have on their shelves.

JOHN GODSEN


Though prenatal diagnosis has provided a valuable tool in helping families with genetic disease, most recognize that this can only ever be a partial solution. Selective abortion will never be entirely acceptable to everyone, and it is the families of affected children who will continue to be born with serious genetic disorders. Many have recog- nised this dilemma and have hoped that one day effective treatments will be available. This little book addresses this problem.