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 Book Reviews
 

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**Glover, D.M.: Genetic Engineering-Cloning DNA. Outline Studies in Biology.** London: Chapman & Hall 1980. 79 pp., 34 figs., 1 tab. Soft bound £ 2.45.

This book is published as one of a series designed to provide a short but authoritative introduction to areas of modern biological research, specifically, for an undergraduate in final year, or for the first year graduate. 'Genetic engineering-cloning DNA' fulfils this role admirably. It describes techniques for the recombination of DNA molecules *in vitro*, dealing in great detail with the enzymology of the processes. The joining of restriction fragments with DNA ligase, and joining of DNA via homopolymeric tails are two recombination methods dealt with in depth. It renders an account of the commonly used bacterial plasmid and phage vectors for the propagation of cloned DNA, concentrating inevitably on ColE1 and its derivatives and on phage  $\lambda$ . The book also explores the potential of vectors which have been designed to facilitate the expression of eukaryotic genes in bacteria.

Techniques for the physical characterisation of cloned DNA molecules are described and examples provided which illustrate current knowledge of the organisation of eukaryotic genes. It is shown for example that information gained by characterisation of cloned sequences goes some way to solving such paradoxes as to why eukaryotes have at least an order of magnitude more DNA than is apparently required to code for structural genes, and why gene transcripts in nuclei of higher organisms are very much larger and more heterogeneous than the functional m-RNA. Yeast vectors and some vectors for introducing genes into mammalian tissue culture cells are described, with a view to the future possibility of re-introducing into eukaryotic cells cloned genes which have mutated *in vitro*.

This book extends and supplements the student's main text-

books and would enable him or her to see how modern research is progressing in the area of genetic engineering-cloning DNA.

J.F. Jackson, Glen Osmond, S. Aust.

**Ayala, F.J.; Kiger, A.J.: Modern Genetics.** California: The Benjamin/Cummings Publ. Co. 1980. 844 pp., 551 figs., 119 tabs. Hard bound DM 70,-.

In this voluminous textbook, the whole field of genetics is presented in an extraordinarily careful and comprehensive way. The book is subdivided into three main parts including organization and replication, expression, and evolution of the genetic materials. In 22 chapters, all the branches of modern genetics are considered. Because of their fundamental importance, the problems of the molecular basis of inheritance dominate, but also the different branches of classical genetics, including the field of applied genetics, are much more extensively discussed than in most other textbooks on genetics. This holds particularly true with regard to evolution. This part is supplemented by a chapter on molecular evolution, a field which has not been considered to such an extent in comparable books. In many chapters, examples from human genetics and cytogenetics are given. The principles of statistics are presented in an appendix; a glossary and a bibliography to the various chapters supplement the text.

The substantial text is illustrated by a very large number of clear figures; many tables give additional information. In this way, a book emerges which presents up-to-date knowledge of genetics clearly and distinctly. Because of its high level of information, it is not only well suited to students seeking to understand the basic problems of modern genetics, but it also gives many suggestions to teachers and instructors.

W. Gottschalk, Bonn