

## BOOK REVIEW

### **Genetics: A Molecular Approach**, Second edition

By T. A. BROWN; Chapman & Hall, London, 1992; 467 pages; £ 19.95.

The number of genetics textbooks available to the undergraduate is increasing rapidly, almost exponentially. The probable cause of such an explosion is the increasing attractiveness of biotechnology as a career option, at least in the West. If so, it is appropriate that the new breed of textbooks has changed the approach from a historical perspective to one starting with the structure of DNA.

The introductory genetics textbook these days has the onerous task of leading the student from Mendel to biotechnology, with whistle stops for gene regulation; the composition and structure of complexes involved in replication, transcription and translation; the organization of genomes; and the techniques employed for studying each of these. The success achieved by the various authors has been somewhat variable. The rapidity with which the state of knowledge in each of these areas is changing should ensure that many of the current textbooks will require updating in the near future.

T. A. Brown's book *Genetics: A Molecular Approach* (second edition) begins with a short historical discourse and then plunges into DNA structure and bases all subsequent discussion on this background. Brown has written an extremely lucid book and has gone to some pains to avoid a compilation of jargon. "The jargon is tiresome but must be dealt with: mutation and recombination are central events in genetics."

The level of structural information provided is sufficient to pique the interest but is not up to that provided in biochemistry textbooks such as that written by Lubert Stryer. The amount of structural information that should be included in a genetics textbook is debatable. It may be argued that the genetics text should concentrate on the principles of genetics and leave the nitty-gritty of protein–nucleic acid interactions to textbooks of biochemistry or biophysics. However, with the trend towards a molecular understanding of the processes underlying phenomena, a detailed description of structure is called for. The level provided here is a happy mean.

Among the standard pitfalls that Brown manages to avoid is the classification of DNA strands as "sense" or "anti-sense". For reasons not entirely clear to this reviewer, both possible conventions have been used in textbooks and it is hard to decide which is more logical. The sequence of the strand that is not transcribed is the one that is more often taken as the "sense" strand in that it can be read and translated to yield the deduced amino acid sequence of the encoded protein. However, the argument can be made (and often is) that the transcribed strand is the one that is used for informational purposes and hence should be the "sense" strand. Brown avoids the problem by talking of "template" and "non-template" strands.

There are a few minor errors that have crept into the book. Among them is a pedigree for haemophilia which is in error. There are a few other errors, but none of them major. The proofreading has been excellent.

Brown follows the now popular custom of a main text with boxes of highlights or details. Many of the prominent personalities in the development of the field are

presented in these sections, often in a manner both revealing and entertaining. For instance, Max Delbrück is quoted as describing Alfred Hershey as “a social misfit ... therefore ideally suited to being a molecular biologist”. In turn, Hershey describes heaven as “having one experiment that works and keeping on doing it all the time”.

The bibliography given at the end of each chapter is quite up-to-date, citing publications up to 1991, which is quite creditable for a book published in 1992. Having got used to symposium proceedings appearing several years after the symposia, and journal publication dates delayed by tardy reviewers, one is inclined to think this is clearly indicative of an efficient publishing system. Most of the citations are to reviews and should prove to be good launching pads to further reading on topics of interest.

Questions at the ends of chapters are a mixed bag, with standard “textbook” questions interspersed with more thought-provoking ones. The latter include some for which there are clearly no answers available at the moment and whose answers this reviewer would deem sheer speculation. Brown is quite unapologetic about these and perhaps rightly so. This reviewer would fault the author for failing to provide an adequate number of quantitative or “data-handling” questions, though there are a few.

This is definitely a book that belongs on the desk of any starting geneticist and would not be out of place on the bookshelf of a practitioner of the art.

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