defined could have been given a more detailed explanation with all others referred to the same place, to the reader's advantage.

One aspect of the cross-referencing that I find irritating is the frequent references to Appendix C, which include one or more years and authors' names. It turns out that these refer not to books or review papers in which the reader can find additional up-to-date information on the terms defined, but to a kind of Hall of Fame, defined by what the dictionary's authors consider the most significant genetic discoveries from 1590 to 1989 and the papers in which these advances were described. The list of these references is ameliorated by some books of scientific history dealing with genetics; but whether these history books are reliable and balanced is a question on which the authors of the dictionary might have risked an opinion. It is suggested that students should spend some time reading both the classical papers and some of the history books, but I doubt whether students will pay much attention to this list unless forced to do so by their teachers.

I have nothing against all the listing in Appendix C, except that the book buyer will have to pay for it, but I think it should have been kept out of the body of the book, where it continually catches the eye and holds up the action. More valuable would have been references to recent books filling out the picture of recent research and gene lists for organisms of particular current genetic interest. Suitable candidates would be *Genetic Maps*, 4th Edition (1987), edited by S. J. O'Brien (the fifth, even larger, edition of this great compendium has now been published), *Genetic Strains and Variants of the Laboratory Mouse* (1989) edited by Lyon & Searle, Michael Ashburner's remarkable *Drosophila: A Laboratory Handbook* (1989), *The Nematode* Caenorhabditis elegans (1988), edited by William B. Wood and others, and so on.

Finally, there are quite a few scientific terms included which I think we could throw away. The reader of the dictionary will soon light upon some, but a few examples are: *aptitude*, *arrhenotokous parthenogenesis*, *breathing*, *breakthrough*, *genopathy*, *genetic surgery*, and *myria-*, defined as 'a rarely used prefix meaning ten thousand'. How many legs does that mean we should expect to find on a myriapod, i.e. the group containing the centipedes and millipedes?

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Protein Engineering: In Focus. By P. C. E. MOODY and A. J. WILKINSON. IRL Press, 85 pages. Paper £6.50. ISBN 0 19 963194 8.

This is an attractively produced, readable and cheap little book. Unfortunately it cannot be recommended. It is doubtful if there is any substantial group of students for whom the book would make useful reading.

The problem really arises with the term 'Protein Engineering'. Trying to understand the structure and function of proteins makes up a large part of modern biochemistry. Steady and substantial progress has been made with the problem since the mid-fifties, and now involves a formidable battery of techniques from physical and theoretical structural studies through enzyme kinetics and protein chemistry to genetic methods. The ability to generate specific mutants by oligonucleotide-directed mutagenesis has been a useful addition, but has not revolutionized the subject. Claims that it would do so were largely a partly successful attempt to get a funding bandwagon rolling under the catchy name.

But it was quickly discovered that the effort to make mutants is largely wasted unless the framework of these other methods exists to provide support for both the design and interpretation of experiments. Anybody could expect to fail to do justice to such a large subject in the (generously illustrated) 20 pages given to it here, and these authors duly fail. A mere 9 pages at the start of the second substantial chapter are used to describe the technology of making mutants. The treatment is out of date and incomplete, and does not provide recent references which might allow a reader to gain some insight into the practicalities of the technique.

The remaining two chapters, and over half the book, are devoted to 'case-study' descriptions of work on half-a-dozen proteins, which makes use of site-directed mutagenesis. The cases are clearly presented, but the absence of a wider background understanding of protein behaviour means that the treatment is quite uncritical.

There are two well-known short reviews of the use of site-directed mutagenesis in studying protein structure and function, by Knowles and by Shaw (in *Science* 1987, **236**, 1252 and *Biochemical Journal* 1987, **246**, 1, respectively). These are now several years old, but any student wanting to understand the possibilities and limitations of this technique would do better to spend an hour or so reading them in the library than to buy this book.

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