

in chemical toxicology. Perhaps this is an instance of the substance of genetics limiting the usages covered by this dictionary. Certainly the eight lines devoted to the definition of 'sex' do not include the usage of a typical tabloid newspaper.

The dictionary originates in the United States and the spellings used are American. This is entirely reasonable as American is now the language of science. No British reader will have difficulty finding 'Heme' and will soon realise that 'Estrous' includes 'Oestrous'. Less obviously, 'Adrenaline' will be found defined under 'Epinephrine'. Of the countless acronyms that might be included, many are to be found, but 'TCA' is taken to mean 'trichloroacetic acid' not 'tricarboxylic acid'. The citric acid cycle is described, with a cross-reference from 'Krebs' cycle'. 'Cat' is included, but not 'CAT' (chloramphenicol acetyltransferase). 'HAT medium' is in and so is 'CAP', but 'cap' is cross-referred to 'methylated cap' and 'cap-site' is not mentioned. Restriction endonucleases are defined, but the names of individual restriction enzymes, so mysterious and sometimes rude to the outsider, are only partially listed.

The dictionary contains a number of appendices, including an outline classification of all living organisms according to the five-kingdom scheme used by Margulis, a list of domesticated species of plants and animals, and a chronology of the development of genetics from the invention of the compound microscope in 1590 to the Nobel Prize-winners of 1984. If you wish to find out who is in and who is not in then you have an additional reason for getting hold of this dictionary.

The production of the book is of a good standard with clear print. I found few typographical errors. For instance 'stromatolites' lacked its first 't' but was correctly placed in alphabetical order. In conclusion I would recommend this dictionary to anyone who seeks a clear definition of the usage of a wide variety of terms relating to genetics. The etymologies are not generally to be found, though there is sometimes an explanation of the origin of terms. This is not always needed: 'snurps' speak for themselves.

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*Genes*. Second edition. By BENJAMIN LEWIN. Chichester: John Wiley. 1985.  
 732 pages. £16.95 paperback, £45.05 hardback. ISBN 0 471 82068 7; ISBN  
 0 471 807893.

This book is a very good introduction to molecular biology. It sets out to cover a field of enormous breadth and succeeds in putting over the subject in a clear and interesting way. The careful structuring of each chapter allows the information to be assimilated readily, a feature which will be greatly appreciated by students. This book is almost certain to become the Watson of its generation.

The odd thing is why it has been produced at all, since it differs little in substance from the first edition. There are, it is true, signs of 'extensive' reorganization throughout the book. These generally amount to alterations in the order of the sections. The text varies in only a few places, apart from the introductory chapters. While the rearrangement sometimes makes for greater clarity, there is often little to choose between the two versions. The new material – so important in keeping the book an 'up-to-date assessment of the field' – usually only amounts to two or three short paragraphs. Thus the T-cell receptor, the 'homeo box' and transgenic mice are mentioned but little more.

There have been some shifts in emphasis, with the second edition stressing the techniques and methods used to obtain results in some of the newer fields. This is valuable but is taken too far in a large figure which suggests that one might use restriction site polymorphism in genetic mapping in *Drosophila*. Recombinant DNA techniques have led to many advances but this is not one of them. Of course Lewin goes on to outline the

impact of DNA variation on human genetics, but it seems a strange introduction to the topic. In this section too occurs a rather anachronistic use of the word 'polymorphism', whereby 'the fruit fly is polymorphic for the series of alleles at the *white* locus,  $w^+$ ,  $w^t$ ,  $w^a$  etc.'. Victorian scientists might have been happy with such a usage but the term 'polymorphism' has a much more restricted remit nowadays as a semi-quantitative description of the frequencies of alleles in populations. *Adh* is polymorphic, *white* is not.

The other shift has been to a greater emphasis on the biochemistry of DNA, which now introduces the book. This gives the book a more modern flavour than the first edition, which started with Mendelian genetics. Not much new material but perhaps an introduction that now sets a truer tone for the rest of the book. The attempt to give more emphasis (2–3 pages of new material here) on the molecular genetics of development in *Drosophila* did not seem to me to be an unqualified success. With the rapid treatment and the close proximity to information on systems where the depth of molecular knowledge is so much greater, this subject seemed to suffer by comparison. Perhaps a more thorough introduction to the problems of development would be justified. However, it is a big book and one would be wary of adding to it. Indeed the author's enthusiasm appeared to balk at a thorough introduction to the immune system, which still only receives one chapter. But this is carping. An excellent book, but if you have the first edition you will not be missing much.

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