

be detected rapidly with new techniques such as the polymerase chain reaction and the Southern (DNA) blot. In fact, it will soon be possible to rapidly characterize unknown mutations in large genes using the very rare transcripts isolated from white blood cells (so-called illegitimate transcripts) and ingenious new detection techniques.

*Human Gene Mutation* contains discussions of many of these unexpected new concepts and techniques, including unstable repeats, genomic imprinting, mitochondrial mutations, two-hit mutations in tumor suppressor genes, retrotransposition, and new mutation detection techniques. However, the reader is given only a glimmer of their novelty and the substantial impact they are currently having on the thinking of human geneticists. The editors have attempted to cover the broad subject of human mutation in an easily accessible, concise monograph. The book is comprehensive and well written, with excellent and plentiful illustrations and extensive and well-chosen references. I particularly liked the fine historical perspective on the study of human variation, the exposition of *cis* regulatory mutations, and the interesting analysis of mutations indicating that their nature and location are nonrandom. Examples of classical mutations in and around

genes are well described and thoroughly referenced. The new and unusual mutations that are currently so fashionable are also discussed, though, to my disappointment, without emphasis and not in the context of their often unusual inheritance patterns. The absence of a section on mutations in *trans*-acting factors, which are ever increasing in importance, seemed an oversight.

Although the book is for the most part a synthesis, a major section on the analysis of nucleotide substitutions is presented in the form of a research article. The material is interesting, but its details interrupt the book's flow and it really belongs in a research journal. It required me to assume the different role of research article reviewer, and it seemed to me that some of the authors' conclusions concerning the non-random nature of these mutations could be questioned. Essentially all the mutations examined were discovered because they alter protein function and produce human disease. Yet they are analyzed at the DNA sequence level as though all nucleotides within the protein coding region of a gene were equally fair game for detrimental mutation. This criticism notwithstanding, the analysis of methylation-induced "hotspot" mutations in humans presents interesting and important data.

The book's shortcomings are minor considering the size of the undertaking and its general success. This is an informative, readable reference work, and I recommend it to anyone interested in the nature and source of variation in the human genome.

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## Books Received

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**Fundamentals of Electrochemistry.** V. S. Bagotzky. Plenum, New York, 1993. xviii, 589 pp., illus. \$115. Translated from the Russian edition (Moscow, 1988) by Klaus Müller.

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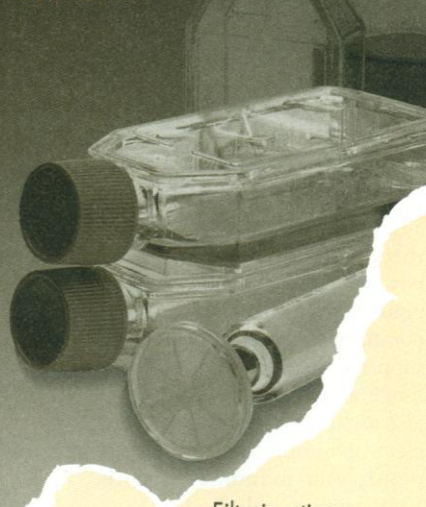
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