strictly new topics in the true sense, since they may have been used for a number of years, they do provide a good starting point for those who want to commence any of these techniques.

Each article provides a review covering the theory and applications of the topic. In general the reviews are well written with good informative introductions. This is followed, in most cases, by useful methodology sections. Where these are given they are generally clear and explicit providing a step by step guide for the various techniques with the chapters on non-radioactive labelling and detection and peptide nucleic acid providing good examples of this. As would be expected in some chapters this section does not include detailed protocols for all the given applications and it is understandable that in a volume of this size that everything could not be included. However,

all chapters are followed by a useful reference section that would point the reader in the desired direction for any given application.

In general I found this book interesting and to a large extent I thought that it fulfilled the aims that were specified for the series, at least for the majority of the techniques included in it. However, it is worthwhile to note that in most chapters the latest reference given is from 1994. Therefore the reader may need to consult further references to be completely abreast of further advances in these techniques. Nevertheless the text does provide a good helpful source for familiarisation with these topics.

Elizabeth M. Hoey

Bioinformatics: From Nucleic Acids and Proteins to Cell Metabolism; Edited by D. Schomburg and U. Lessel, VCH; Weinheim-New York, 1995. viii + 195 pp. DM 148.00 (hb). ISBN 3-527-30072-4

This book contains 14 articles on different aspects of bioinformatics, i.e. the application of computer science to biological problems. The different articles cover various aspects of bioinformatics. The articles are written as scientific publications, i.e. they are not review articles. The chapters covers the fields specified in the title: 'From Nucleic Acids and Proteins to Cell Metabolism'. They are divided into four different areas, 'Biological Databases' (one article), 'DNA and RNA' (four articles), 'Protein Sequences and Structures' (five articles) and 'From Molecules to Cell Metabolism' (four articles).

In the 'Biological Databases' section is described how a set of isolated databases can be integrated and accessed through a common interface. In the 'DNA and RNA' section different aspects of sequence analysis are discussed as well as one paper about folding landscape of RNA. These papers give some good examples of how sequence information can be used to understand how DNA has evolved. The 'Protein Sequences and Structures' section can be divided into two parts. The first three papers describes methods that can be used to identify a protein fold given its sequence. The last two papers describes two different methods for docking a ligand to a protein. The last section of the book, 'From Molecules to Cell Metabolism', contains papers that did not fit into the other sections of the book. The first paper describes a novel method to speed up the force field minimization of a macromolecule. The second paper describes a new method to compare molecular structures. The last two papers describe fluxes of substances in either micro-organisms or intra-cellular.

It is clear that most of the articles are written by computer scientists for other computer scientists as the book is too technical for biologists/chemists. However, I doubt that the book contains enough unpublished new material to be worth buying for a computer scientist in the field. For a computer scientist outside the bioinformatics field this book could be a good overview of different aspects of bioinformatics.

It can be noted that neural networks (NN) are used in three of the papers. This shows that NN has become a standard tool to solve complex problems in bioinformatics. Further, several of the papers describe how algorithms have been implemented on massively parallel computers, showing how important these computers have become.

A few considerations come to mind when reading this book. (1) Why does the book contain three articles in German? It makes these three articles completely inaccessible for the majority of the scientists in the world. (2) Reading this book you really understand the valuable work that is done by the publishing companies. Several of these articles would be much easier to read if they were formatted and not just plain manuscripts. At least it would have been nice if a similar format for references had been used throughout the book. (3) In several of the papers it seems as if the authors are more interested in the techniques, i.e. the computer science, than in the answers it can give, i.e. the biology. This makes the book less attractive for a general audience.

Arne Elofsson

Molecular Biology and Biotechnology. A Comprehensive Desk Reference; Edited by R.A. Meyers, VCH; Weinheim-New York. 1995. xxxviii + 1034 pp. DM 89.00 (pb). ISBN 1-56081-569-8

This book is a unique and valuable desk reference book of very high quality that can be recommended as a handbook in all molecular biology laboratories and libraries.

The book, which has numerous authors from the fields of molecular biology, molecular genetics, and medicine, has on its editorial board sixteen distinguished scientists of whom eight are Nobel Prize laureates. The authors, the Editorial Board and the Editor have performed an excellent job in providing a professional-level reference book that covers the molecular basis of life and the application of such knowledge in genetics, medicine and agriculture.

In contrast to other books covering similar topics this book is ordered alphabetically. This makes it an untraditional but valuable reference work. It is therefore useful that the Editor has provided a paragraph on how to use the book.

There are more than 250 articles in the 1034 page book. They cover the major areas of molecular biology and biotechnology: genetics and nucleic acid structure and processes; human genome project; molecular biology of specific organ systems and specific diseases; biotechnology techniques, applications and products; immunology and bimolecular interaction; relationships of molecular biology to pharmacology and biochemistry.

The articles fall into three categories: (1) core articles that provide a perspective on major topics (e.g. cancer); (2) satellite core articles that give a perspective on particularly active and important areas (e.g. oncogenes); (3) specific subject articles (e.g. colon cancer).

Each article is a self-contained unit. It begins with a keyword section, including definitions. This is followed by a short introduction, sections describing the different topics, and finally a section covering summary, future perspectives, an elaborate list of cross-reference keywords and a short list of relevant references. At the end of the book a list of more than 1600 keywords that are defined within the context of a given article is included. Also included is a list of the 40 most commonly used terms in molecular biology.

The book is well written and well illustrated with over 500 figures and 120 tables. Even though 378 scientists have contributed to the writing, the book has a uniform appearance. The core articles cover the subjects in a surprisingly detailed manner considering the limited amount of space available for each topic. With the included list of keywords at the end of each article and the reference list it is easy to find additional reading. The authors, Editorial Board and not least the Editor thus have succeeded in covering the very broad areas that they intended: the

molecular basis of life and the application of that knowledge in genetics, medicine, and agriculture.

The book is highly recommended for everybody who is interested in this area of research and will provide introductory information to both newcomers and experts interested in the field. As a reference source it

is highly valuable and recommendable both for libraries and for laboratory use.

Gunna Christiansen

Fields Virology, 3rd edn. (two vol. set); Edited by B.N. Fields, D.M. Knipe, P.M. Howley, R.M. Chanock, J.L. Melnick, T.P. Monath, B. Roizman and S.E. Straus, Lippincott-Raven, Philadelphia, PA. 1996. 3216 pp. $339.50 (hc). ISBN 0 7817 0253 4

This is the third edition of a two volume book which has already become an institution -- Fields Virology. Few areas in medical science have advanced as rapidly as virology, a discipline that is less than 100 years old, although viruses have infected a range of hosts including man from the dawn of history.

The two volumes (running to a total of 2950 pages excluding the index) provide a balanced and comprehensive view of virology ranging from the origin of viruses, molecular aspects of viruses to their aetiology in a variety of diseases and prevention of infection. The first part covering general virology spans some 600 pages and includes the general principles of taxonomy, viral genetics, evolution, pathogenesis, epidemiology, immune response, diagnostic virology, antiviral agents, vaccines and excellent general chapters on plant viruses, insect viruses, viruses of yeast, fungi and parasitic microorganisms and

bacteriophages. The remainder of the text is devoted to specific virus families and unclassified agents, crowned by a superb treatise on prions. The references are encyclopaedic and remarkably up-to-date. The book is profusely illustrated with outstanding line diagrams and good electron micrographs. Histological photographs and clinical photographs are reproduced in black-and-white and their value is thus very limited.

The skilled and perspicacious selection of authors, all of whom are experts in their field, ensured an outstanding book of high scholarship and a triumph in living testimony to Bernard Fields, who died in 1995 as the Third Edition went to press.

Arie J. Zuckerman

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