

## Book Reviews

**Carbohydrates.** Edited by P. M. Collins, Chapman and Hall, London, 1987, xi + 720 pp. ISBN 0 412 26960 0. Price: £95.00.

Carbohydrates are the most abundant class of organic compounds and are central to all dietary needs. They find industrial importance in the food, pharmaceutical and chemical industries as additives, pharmaceutical agents, chiral templates for synthetic reactions or as feedstocks for valuable chemicals or bulk organic compounds. This book, a volume in the *Chapman and Hall Chemistry Sourcebook series*, provides essential data on several thousand individual carbohydrates. The data recorded includes: origin, molecular weight, structure, melting points, boiling points, specific rotations, spectral data and toxicological properties as appropriate. Whilst there are a majority of entries to monosaccharides and their derivatives, carbohydrate polymers (including oligosaccharides, polysaccharides, etc.) feature prominently, and the information on the rarer monosaccharides, such as di- and tri-deoxysugars, diaminosugars, etc., will be of value to the researcher working with microbial polysaccharides for example.

Access to this mammoth work, which lists entries by alphabetical order, is facilitated by the 200 pages of indices. There are four methods of indexing the compounds: the Name index which lists compound names, synonyms and accepted trivial names; a Molecular Formula index which lists, in Hilla convention order, all molecular formulae of the various carbohydrates and derivatives; a Chemical Abstracts Service (CAS) Registry number index in serial order; and a Type of Compound index which groups together compounds according to their type (e.g. tetroses, *gluco*-hexoses, 2,3-anhydrosugars, 3-amino-3-deoxysugars, etc.). It is anticipated this last index, which lists each entry under at least one of the 102 headings, will be very useful to the carbohydrate chemist, and represents a new type of indexing for the *Dictionary of Organic Compounds* from which this volume is partially derived.

The price precludes the personal purchaser, but the volume is recommended as an essential reference work to practising carbohydrate chemists and biochemists from academic and industrial laboratories.

**John F. Kennedy**  
**Charles A. White**

**Biotechnology: A New Industrial Revolution.** By S. Prentis, Orbis Publishing Limited, London, 2nd edition, 1985. 212 pp. ISBN 0 85613 914 9, Price: £12.00.

Biotechnology, the wonder of wonders of the applied sciences has captured the interest of people from almost all walks of life — industrialists, investors, economists, governments, scientists and technologists. What is it anyway, that it is thought to be the solution to all problems — economic, health energy, etc...?

This book introduces the science, explains its applications and describes present researches and their impact on our lives. It is very comprehensible, readable, enlightening and up-to-date, and anyone, even a non-technical person will find it a mine of information and at the same time an entertaining and enjoyable book.

The author introduces the science by first familiarising the reader with the basic chemical principles of life, particularly the structure and function of proteins and of the genetic material, DNA. Next, he explains how these materials can be manipulated to manufacture useful goods for mankind. This is followed by a discussion of the application of biotechnology in the field of medicine for prevention, diagnosis and cure of diseases; application in the field of agriculture for higher-yielding disease-resistant, nitrogen-fixing plants; application in the field of nutrition for production of nutrients, vitamins, amino-acids, single-cell proteins and sugar substitutes; production of energy sources — alcohol, methane and hydrogen gas; application in the chemical, mining and oil extraction industries — production of acetone, organic acids, alcohols, polymers, xanthan gums; with the microchip industry for the manufacture of biosensors and biochips for analytical processes; and for the prevention of pollution.

After convincing the reader of the very great promise in biotechnology as a solution to a lot of our present problems, the book ends with a note of warning — a chapter on its social, political and ethical implications — on the potential danger/disadvantages of this fascinating and powerful science.