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BOOK REVIEW

Richard J. Sundberg: The Chemical Century. Molecular Manipulation and Its Impact on the 20th Century

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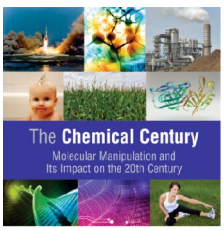

Bibliography
The Chemical Century. Molecular Manipulation and Its Impact on the 20th Century
Richard J. Sundberg
Apple Academic Press, Waretown, NJ, USA, 2017, pp xxvi + 744
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GBP 95.00, USD 149.45

It is pleasing to encounter a book, such as the present volume, by an author who can make a subject interesting and relevant.

The book is divided into five main sections, each of which are split into individual chapters which deal with a range of chemicals that have been become important, and, indeed, essential, to modern life.

The Introduction briefly describes the advances in chemistry on the 20th century ending with some salutary thoughts about global warming (let us hope that President Trump reads them, though this is unlikely). Chapter 1 then deals with explosives and propellants—a blessing and a curse. Explosives enable wars to be conducted on a scale unprecedented in earlier times, but propellants make it possible to send rockets into space. The coverage is comprehensive ending with a description of triacetone peroxide used by terrorists. Chapter 2 describes hydrocarbon fuels and crude oil processing, a much ploughed field: it has much to say about global warming but also touches on other topics such as chemicals from oil and alternative energy sources.

Part II consists of five chapters on topics ranging from halogenated hydrocarbons through polymers in general to a small chapter on silicones. Again, the coverage is comprehensive and thought-provoking. Part III is a smaller, but no less important group of three chapters on "Chemistry and Food". Starting with the manufacture of nitrogen fertilizers by the Haber–Bosch process, it goes on to describe the production of herbicides and pesticides. Without the contribution of chemistry, it is difficult to see how agriculture could support the current world population. The chapters include such diverse topics as decaffeination and the effect of diet on Type II diabetes.

Part IV is a large section of three chapters mainly about modern drugs which have been so conspicuous in the increase of life expectancy. Few eminent Victorians lasted much beyond 70 years of age; advances in pharmaceutical chemistry since Ehrlich and his team introduced Salvarsan in 1910, followed later in the century by penicillin, have played a significant role in increasing life expectancy.

Part V consists of a small chapter on advances in biochemistry, in particular work on DNA. Every chapter ends with a summary of keywords and a bibliography and references for further reading.

This is a splendid book which should be in the hands of all teachers trying to explain to students the importance of chemistry in modern life. I think in this respect, a better title would be "The role of chemistry in society in the 21st century". This is not a cheap book for a private purchaser but worth every penny.

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