Polyisoprenoids. (Series: Biopolymers, Vol. 2.) Edited by *Tanetoshi Koyama* and *Alexander Steinbüchel*. Wiley-VCH, Weinheim 2001. 425 pp., hardcover € 259.00.—ISBN 3-527-30221-2

This volume deals with the occurrence, biosynthesis, and application of those natural substances that have been termed polyisoprenoids and are polymeric condensation products of the C_5 building block isopentenyl diphosphate. The main emphasis is placed on natural rubber, the most abundant and widely applied polyisoprenoid biopolymer, of which about 7 million tonnes per year are obtained from the rubber tree *Hevea brasiliensis*. However, terpenoids, steroids, carotenoids, dolichols, and prenylquinones also belong to this group of natural polyisoprenes, and some of these are mentioned too.

The first chapter is a short overview describing the structure of naturally occurring rubbers from various plants, with particular emphasis on latex and rubber from *Hevea brasiliensis*, *trans*-polyisoprenes from chicle and guttapercha, as well as *cis*-polyisoprenes from guayule and other higher plants. Chapter 2 introduces the reader to the chemical structure and synthesis of synthetic polyisoprenoids, including hybrid polyisoprenoids (aroisoprenoids).

Chapter 3, by Michel Rohmer and coworkers, reviews the two biosynthetic pathways for the formation of the active C_5 carbon skeleton isopentenyl diphosphate (IPP) and its isomer dimethylallyl diphosphate (DMAPP), which are the starting points and building blocks for the head-to-tail (or in some cases tail-to-tail) condensation to form the many primary and secondary polyisoprenoids found in plants and also in fungi or bacteria. The recently discovered deoxyxylulose-phosphate/methylerythritol-phosphate (DOXP/MEP) pathway for the biosynthesis of carotenoids, phytol, diterpenoids, and other chloroplast isoprenoids in higher plants and other photosynthesizing organisms is described in detail, together with the presently known enzymatic steps and the role of the inhibitor fosmidomycin. Plants produce their sterols and most sesquiterpenoids via the cytoplasmic classical acetate/mevalonate pathway, whereas the photosynthetic isoprenoids and diterpenoids are made via the plastidic DOXP/MEP pathway.

Chapter 4 is entitled "Biosynthesis of natural rubber and other natural polyisoprenoids", and includes the enzymes and elongation factors of the later steps of rubber biosynthesis as well as defense-related proteins and the perspectives for transgenic plants. Unfortunately the important question whether the C_5 units for rubber formation are solely made via the classical acetate/mevalonate pathway or can at least partly be provided from the DOXP/MEP pathway is not addressed, despite the long report on the existence of the DOXP/MEP pathway in Chapter 3.

Chapter 5 describes the various biosynthetic steps in the formation of sterols, carotenoids, ubiquinones, and polyprenols in plants. Chapter 6 deals with interesting aspects of the "Biochemistry of natural rubber and structure of the rubber latex", including latex allergens and latex flow factors. Further chapters concentrate on more practical topics, such as "Technical production of synthetic rubbers", "Processing of natural and synthetic rubbers", and "Producers and the world market of synthetic rubbers", which are of essential interest and relevance to the practical application of rubbers and polyisoprenoid materials of different origin.

Finally, chapters of "more" technical significance on "Biodegradation of natural and synthetic rubbers" and on "Biotechnological processes for recycling desulfurization of rubber products" round off this comprehensive book on polyisoprenoids. A comprehensive index provides quick access to the different topics and interests of the reader.

The book is an appealing introduction to the large field and the many different aspects of polyisoprenoids and their biosynthesis, composition, and applications. It is a great achievement of the editors to cover all this in one volume. The chapters are well structured and consist of several subchapters such as introduction, historical outline, presentation of data and facts, as well as outlook and perspectives. Each chapter provides a list of valuable references to original papers for further information. The chapters were written by experts in the particular fields, but these did not include a plant physiologist/plant biologist. Thus, several chapters are not fully up-to-date. For example, the authors failed to point out that polyisoprenoid biosynthesis in plants exists in two forms, and is bound to two different compartments, with different regulating mechanisms, as has also been documented in the existence of different genes, etc. Here the editors should have consulted a plant biologist to bring in various plant-specific aspects and literature references, and to better interconnect the different chapters in this respect. Moreover, the title of the book is "Polyisoprenoids" and this should have been printed in bold face on the cover, rather than the series name "Biopolymers". The latter is only of secondary interest and should appear only "in petit".

The book is of general interest to scientists, particularly in biochemistry and chemistry, but also to those in plant biology, agriculture, and biotechnology, as well as to all those who are involved and interested in the production and practical application of natural and synthetic rubbers.

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Flüchten, Mitmachen, Vergessen. Chemiker und Biochemiker in der NS-Zeit. By *Ute Deichmann*. Wiley-VCH, Weinheim 2001. 596 pp., softcover € 34.90.—ISBN 3-527-30264-6

Fifty five years after the end of the National Socialist era a comprehensive account of the expulsion of Jewish chemists and the behavior of their non-Jewish colleagues is at last available. Ute Deichmann has recorded the 535 chemists who were active at universities and MPIs in Germany at the beginning of 1933 and in Austria at the beginning of 1938 on the basis of university curricula and progress reports of the Kaiser Wilhelm Institutes. Of the 141 (26%) who lost their positions or who emigrated 87% were Jews or of Jewish ancestry. In a detailed work, the author has compiled from a number of sources the life histories and research activities of the chemists who were dismissed and who emigrated as well as of their colleagues

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