Ort, D.J., Yocum, C.F. (ed.): **Oxygenic Photosynthesis: the Light Reactions.** (Advances in Photosynthesis Vol. 4.) - Kluwer Academic Publisher, Dordrecht - Boston - London 1996. 682 pp. US $ 280.00. ISBN 0-7923-3683-6.

This book is the volume fourth of Advances in Photosynthesis, series edited by Govindjee. The contributions have been written by excellent scientists in the field and the book thus mostly represents the newest advances and hypotheses. Despite of the name of the book, there are also involved events which do not really contribute to so-called light reactions.

All the book is arranged into eleven divisions and they together include 34 chapters. These parts start with thylakoid membrane structure, synthesis and assembly of thylakoid components, description of individual membrane protein complexes follows. The book is completed with molecular biology and genetics of photosynthetic apparatus, both of chloroplast and nuclear genomes.

The book begins with an up to date overview concerning electron transfer and energy transduction in photosynthesis given by the editors. Together with second chapter it supplies us the basic and necessary knowledge of the function of thylakoids in the oxygenic photosynthesis. The section of the development of thylakoids covers the evolution as well as the biogenesis and control and regulation of this process. However, the metabolism of individual thylakoid components is oriented only toward biosynthesis and the their degradation, which is also part of development, is omitted. It is valid both for lipids and proteins.

Next chapters deal with photosynthetic apparatus. The function and structure of individual photosystems are separately described in several chapters. The phenomenon of oxygen evolution is covered in separate section in great detail. The same holds true for light harvesting complexes. The final chapters are devoted to molecular biology of photosynthesis, namely regulation of expression of both chloroplast and nuclear photosynthesis related genes. Surprisingly, the chloroplast transformation is presented only in algae and much attention is paid for the precise protocols for several transformation methods. The questions on nuclear genes regulation are presented in next chapter quite concisely. There is only briefly outlined the co-ordination of the expression of both genomes. The final chapter deals with evolution of chloroplast and individual components of photosynthetic apparatus and the schematic for evolution of photosynthetic organisms is presented.

This book is quite concise and written mostly clearly and understandably. The outline of all chapters are the same and it is easy to orientate within the text. The book contains recent progress in all the topics necessary for our understanding of photosynthetic processes and their regulation. Therefore the book deserves to be highly recommended to scientists and students in the field. Despite several topics are overlapping here, it supply us with the basic advances in understanding of structure, function, development, and regulation of photosynthetic apparatus of oxygenic process.

N. WILHELMOVÁ (*Praha*)