

Mathis, P. (ed.): **Photosynthesis: from Light to Biosphere**. Vol. 1. - Kluwer Academic Publisher, Dordrecht - Boston - London 1995. 1004 pp. ISBN 0-7923-3857.

This book represents first part of voluminous five-book Proceedings of the Xth International Photosynthesis Congress, held in Montpellier, France, 20 - 25 August 1995. It is almost unbelievable to issue such a huge amount of contributions in this short period after closing of the Congress. This event reflected the most recent advances and hypotheses beginning with the effects of global biosphere changes on photosynthesis towards problems on molecular level. They were solved by a range of methods represented by ecophysiological to biochemical and biophysical approaches. It is not surprising that such a large research field was represented by around 1400 of participants and contributors from all over the world.

Volume 1 consists of three major areas of 24 total: 1) antenna systems: structure and function, 2) reaction centers: purple bacteria and PS 2, and 3) evolution of photosynthesis. As an introduction, the book begins with two of historical and economical lectures. Unfortunately, one of them was held in French which was not comprehensible to everybody.

Part 1 contains 101 articles and deals with composition and function aspects of light harvesting systems in higher plants, cyanobacteria, algae, and in bacteria. To this purpose, the studies in this area use highly modern methods such as spectroscopy (fluorescence, hole burning) as well as excited state dynamic temperature dependence of spectra. The using of artificial model systems has been described. Also light harvesting complexes were crystallized for structural analyses. Molecular biological approach and using of mutants were employed for better understanding of radiation capture processes. Moreover, the influence of various stress conditions on light harvesting has been involved.

Part 2 consists of 130 contributions and concerns mostly PS 2 reaction centers of higher plants and of purple bacteria. For structural and functional studies sophisticated spectroscopic methods (ultrafast, EPR, ENDOR, FTIR), purification of reaction centre units and RC 2 mutations were employed. Extensively studied field on photoinhibition and photoprotection represents large part of this section contributing to our knowledge of regulation of photosynthesis. Energy transfer was mostly studied by fluorescence kinetics and using model systems. Also influences of some environmental factors on PS 2 are described.

The last part in Vol. 1 contains only 10 contributions. This small section deals with evolution of photosynthesis. There are articles on the origin and evolution of plastids, photosynthetic enzymes, sequence analysis of genes of gene cluster, as well as phylogenetic analysis of RCs.

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