Singhal, G.S., Renger, G., Sopory, S.K., Irrgang, K.-D., Govindjee (ed.): **Concepts in Photobiology. Photosynthesis and Photomorphogenesis.** – Kluwer Academic Publishers, Boston – Dordrecht – London; Narosa Publishing House, Delhi – Madras – Bombay – Calcutta – London 1999. ISBN 0-7923-5519-9. Pp. 1019. NLG 480.00, USD 288.00, GBP 168.00.

A new, voluminous book on photosynthesis was published in August 1999. It deals chiefly with photosynthesis, as indicated by the list of editors and a look at the list of chapters, which are arranged in three parts: Photosynthesis, Stress Response, and Gene Regulation and Photomorphogenesis.

Part A, Photosynthesis [473 pp.] presents recent results relating to fundamental photosynthetic processes and could be considered as a general introduction to the topic. This part is divided into three sections: Basic principles and primary processes (of photosynthesis); Photosynthetic apparatus; Photophosphorylation and $CO_2$ mechanism.

Part B, Stress response [214 pp.] deals with light stress and other stress factors and, similar to genomics in the last section it doubtless represents a very recent and lasting topic. It is also closest to the keyword Photobiology in the name of the book. The other stress factors include elevated temperature stress effects, salt tolerance, engineering, and oxidative stress. However, the book lacks, *e.g.*, a chapter on heavy metal effect. Plant tissues are frequently exposed to this kind of stress, and a comprehensive view of the effect of this stress on the photosynthetic apparatus, discussed on molecular level, would have been very useful. (Two sections: Light stress; Other stress factors.)

A modern handbook would certainly be incomplete without the chapters of Part C, Gene Regulation and Photomorphogenesis [272 pp.]. This part includes sections on Chloroplast molecular biology and regulation (chapters: Molecular biology of chloroplast genome; Regulation of plastid gene expression); photoreceptors and functions (chapters: Phytochromes: molecular structure, photoreceptor process and physiological function; Blue light perception and signal transduction in higher plants; UV-B effects in plants: receptors and targets) Photoresponses and molecular mechanisms (chapters: Photomorphogenesis in lower plants; The photoperiodic control of plant reproduction; Light signal transduction and nuclear gene expression; Use of mutants and transgenics in understanding photomorphogenesis).

Regulation mechanisms are poorly described here, although this is the most important and most attractive subject of present research. Moreover, it is not a "black box" any more. Even modern and recent textbooks include chapters of regulation and control principles of carboxylation enzyme, Calvin cycle processes, *etc.* Only Part C includes a separate chapter dealing with regulation of plastid genome. More recent topic, more recent conception?

In addition to the editors, 57 authors from the most renowned research institutions contributed to the book. All these factors guarantee an outstanding scientific level of the book under review. Each chapter is accompanied by numerous illustrations, diagrams, tables, and before all, lists of the recent literature cited. The alphabetical subject index is rich and helpful [56 pp.]. The reader will be well served by this publication, whether he is looking for new fundamental findings in photosynthesis or more specialised information in the chapters on stress and genomics.

Last but not least, I should like to remember Dr. Noun Shavit, Professor of Biochemistry at the Ben-Gurion University of the Negev, Beer-Sheva, who left the photosynthesis community and this world in 1997 aged 67. His life and professional curriculum is remembered in the introduction to the above book. We shall not forget him.

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