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Farineau, J., Morot-Gaudry, J.-F.: **La Photosynthèse. Processus Physiques, Moléculaires et Physiologiques.** [Photosynthesis. Physical, Molecular and Physiological Processes]. - Institut National de la Recherche Agronomique, Paris 2006. Pp. 403. EUR 49.00. ISBN 2-7380-1209-4.

A new book on photosynthesis is always very welcome. I find it surprising that such an important complex of processes has been treated in relatively few books only. Of course, there are numerous volumes dealing with very detailed information on photosynthesis at individual levels of structures and processes. However, overviewing summaries of photosynthesis covering it from the level of thylakoid to canopy are rare. Hence, this new volume is most valuable. Unfortunately, it is in French. Although I personally like this language, it will be this title's handicap for the majority of scientific community worldwide.

The book starts with a preface by the authors briefly explaining the content of the individual chapters. The first part (67 pages) is devoted to an overview of the photosynthetic processes (light energy, pigments, reaction centres, principles of oxidoreduction processes) including adequate information on the history of the most important discoveries. Part II (110 pages, its title failed to be included into the content) describes in much detail classification of the photosynthetic organisms, leaf and chloroplast structure, oxygenic photosynthesis, electron transfer on the thylakoids, ATP synthesis, photosynthetic efficiency, distribution of radiation energy between the two photosystems and photosynthesis of algae and cyanobacteria. Part III (30 pages) explains anoxygenic photosynthesis of both bacteria and phototrophes. The large part IV (86 pages) deals with carbon metabolism and includes also principles of nitrogen and sulphur assimilation. Furthermore, carbohydrate synthesis and export as well as C4 and CAM metabolisms are explained. This part terminates with brief notions on the CO<sub>2</sub> assimilation of organisms not equipped with rubisco (*Chlorobiaceae* and *Chloroflexus*). The final part V covers the effects of the environment on photosynthesis: gas exchange of the leaves and canopies, the effect of water availability, irradiance, oxygen, nitrogen and CO<sub>2</sub> concentration. Finally, some agronomic and global aspects of photosynthesis are also mentioned. The annex contains an overview of the herbicides inhibiting photosynthesis. Valuable glossary (13 pages) defines or

explains the most important terms frequent in the photosynthetic literature.

The description of the content clearly indicates that this book covers the majority of aspects related to photosynthesis. This is its most valuable feature. Obviously, not all parts have been dealt with the same profundity. Structures and processes at the level of chloroplasts and thylakoids are precisely and adequately described. However the ecophysiological aspects should be taken only as a preliminary introduction. For example, for unknown reasons the effects of an enhanced CO<sub>2</sub> concentration have been illustrated by a detailed and not well-founded description of an experiment carried out in 1994 although much more has been known and reviewed in many recent publications.

More citations should have been included. For example, the chapter on global carbon sources and sinks contains no one citation although several numbers and one figure illustrate quantitative fluxes. Similarly, results by O. Warburg are rightly mentioned (p. 176, 234) with no reference to his publications. The important remark on the ATP synthase of the bacterium *Propiogenium modestum* (p. 162) would deserve the indication of the source of such information. Finally, several figures have been included with no information on their authorship. And my last objection relates to the literature: from more than 300 cited references, only 10, 6 and 1 were published in the years 2003, 2004 and 2005, respectively, although the book was published in 2006 and photosynthesis research continuously flourishes.

My discordant remarks should not negate the many positive values of this book. According to its authors, it is intended to be used by students and teachers of agronomy, pharmacy, and biology. I would recommend it also to many researchers who need an easy to survey text on photosynthesis in its broad contexts. And let me terminate with my personal wish: I would be pleased to get a new revised edition in English. I am sure that it would be welcome by many from the photosynthetic research community.

L. NÁTR (*Praha*)