Pessarakli, M. (ed.): **Handbook of Photosynthesis.** (Books in Soils, Plants, and the Environment). - Marcel Dekker, New York - Basel - Hong Kong 1997. 1027 pp. USD 195.00. ISBN 0-8247-9708-6.

Enormous number of scientific papers, reviews and books devoted to photosynthesis which has been published recently reflects continuous interest in the study of this unique physiological process. In contrast to highly specialized and extensive volumes which has appeared in book series Advances in Photosynthesis (for review see, *e.g.*, Biologia Plantarum 39: 330, 1997), the aim of this book was to present the most recent information on photosynthesis in a single volume. It was rather difficult task, impossible to be done without concentrated work of a large number of specialists coordinated by an experienced editor.

The resulting Handbook of Photosynthesis which was written by 88 scientists from 26 countries consists of 63 chapters divided into 14 parts. Traditional approach to the description of photosynthesis from physical and physicochemical primary processes to the biochemical cycles and assimilate utilisation was not respected in the general design of the book. The selection of an alternative criteria for division of the book content into parts is not much clear and in some cases even rather confusing. Also the number of chapters included into individual parts is highly variable. Introductory Part I (strangely entitled as Principles of Photosynthesis) consists of only two chapters describing ecophysiology of plants with different fixation pathways (C_3, C_4, CAM) and morphological characteristics of chloroplasts, respectively. The following Part II (Biochemistry of Photosynthesis) together with Part III (Molecular Aspects of Photosynthesis) consists of 25 chapters, mostly devoted to the structure and function of individual components of photosynthetic apparatus, including their formation and developmental control. Part IV (Atmospheric and Environmental Factors Affecting Photosynthesis) could be joined with the Part XIII (Photosynthesis Under Environmental Stress Conditions). Eleven chapters which we can find in the both mentioned Parts, are especially well written, but nevertheless hardly sufficient to cover all aspects of this important field of research. Very interesting is also Part XII (Photosynthesis and Its Relationship with Other Plant Physiological Processes) with four chapters. To the smallest sections of the book (with only two chapters in each) belongs Part V (Photosynthetic Pathways in Various Crop Plants), Part VI (Photosynthesis in Lower Monocellular Plants), Part VIII (Photosynthesis in Different Plant Parts), and Part XI (Photosynthetic Activity Measurement and Use of Models in Studying Photosynthesis). It is impossible to mention here the titles even of the most interesting chapters of this outstanding book because there are too many of them. I would like only stress that some of the chapters contain a lot of methodical details or critical revisions of existing methods, which will be undoubtedly highly valuable for a number of researchers. All of the 63 chapters are arranged in a very similar and concise way, with a short introduction, description of the phenomenon or problem, and with conclusions or a short summary. The book is excellently edited, printed, and bound. It will be particularly useful for teachers of plant physiology and advanced students, and also for many others interested in photosynthesis research.

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