Carre, F., Chagvardieff, P. (ed.): **Ecophysiology and Photosynthetic *in Vitro* Cultures.** - CEA Cadarache, Saint-Paul-lez-Durance 1995. 212 pp. FF. 150.00. ISBN 2-7272-0175-3.

This book presents contributions (oral presentations and posters) to the first international symposium focused on photosynthesis of *in vitro* growing cells, calli or plantlets held at Aix en Provence (1 - 3 December 1993). Since the first photoautotrophic culture of a higher plant reported in 1967 about 26 plant species have been successfully cultured. Photosynthetic *in vitro* cultures has been breakthrough in our knowledge not only in the field of *in vitro* cultures but also in the field of photosynthesis enabling to be investigated under new experimental conditions.

This book is introduced by an overview of plant cell cultures. The following chapter presents a suspension culture as a model for cell wall metabolism studies. The third chapter deals with the accumulation of plastid heat shock proteins for the protection of photosystem 2 activity. The chapters 4 and 5 concern the response of plant cells to light stress and photoinhibition, the chapter 6 to UV-B induced stress. The effects of photosynthesis on secondary metabolism are the items of the chapters 7 and 8. The use of photoautotrophic cell cultures for selection of lines resistant to herbicides or salinity is shown in the chapters 9 and 10. The chapter 11 is devoted to mathematical simulation of environmental conditions during *in vitro* cultivation. Growth and photosynthetic characteristics of plantlets as affected by the composition of medium and vessel atmosphere are discussed in chapters 12, 13, 14, 18, 19 and 20. The chapter 15 is focused on plantlet stomatal physiology. The acclimatization of plantlets grown *in vitro* to *ex vitro* conditions is evaluated in chapters 16 and 17. In addition abstracts from 13 posters are presented.

The book brings new information in developing research field. It can be recommended to everyone interested in plant physiology and biotechnology.

J. POSPÍŠILOVÁ (*Praha*)