

Murray, D.R.: **Carbon Dioxide and Plant Responses**. - Research Studies Press Ltd., Tauton, John Wiley & Sons Inc., New York - Chichester - Toronto - Brisbane - Singapore 1997. 275 pp. ISBN 0-471-97249-5.

Atmospheric CO₂ concentration is expected to almost double within the next century if current emissions are not reduced, so an understanding of how higher plants cope with such a dramatic environmental change becomes a question of vital importance. Therefore the monograph concerning plant responses to carbon dioxide is undoubtedly welcome.

The introductory chapter surveys changes in the composition of Earth's atmosphere since the appearance of living organisms. As concerns direct effects of CO₂, major enzymes involved in carboxylation are briefly outlined, and CO₂ as their activator is discussed (chapter 2). In addition, the question of how CO₂ is detected by plant cells is considered. The chapter 5 deals with short- and long-term effects of CO₂ on photosynthesis and photorespiration in C₃, C₄, C₃/C₄ intermediate, and CAM plants. The possibility of down-regulation of photosynthesis due to long term cultivation under CO₂ enrichment is discussed. Changes in density and distribution of stomata, epicuticular wax deposits, and stomatal conductance induced by elevated CO₂ concentration are the main items of the chapter 6. Consequences for water relations and water use efficiency are evaluated. The chapters 3, 4 and 6 are devoted to effects of elevated CO₂ concentration on root, leaf, and stem growth, morphology, anatomy, chemical composition and certain functions. Also flowering, fruiting, and seed yield and quality could be affected by CO₂ (chapters 8 and 9). The interactions of CO₂ with aerial pollutants and ultraviolet radiation are discussed in the chapter 10. Because there is wide variation in the responses of individual plant species to increased CO₂ concentration the future changes in composition of natural plant communities should be considered (chapter 11). The last chapter attempts to highlight steps that will assist net global carbon fixation.

For scientists, university teachers and students this book brings a good up-to-date information. However, it also could alarm "responsible people", sadly many of whom are more concerned with their own political survival.

J. POSPÍŠILOVÁ (*Praha*)