Kendrick, R.E., Kronenberg, G.H.M.: **Photomorphogenesis in Plants.** 2nd Edition. - Kluwer Academic Publishers, Dordrecht - Boston - London, 1994. 828 pp.

Second edition of the compendium on plant photomorphogenesis appears 8 years after the first one. In spite of the fact that the editors and most of the authors are the same, the new edition is rewritten to a large extent with several new chapters added concerning the "hot topics" of the current research in the field. The introductory chapter by L.O. Björn describes the history of the research in the field, discovery of phytochrome and of other photoreceptors and advances in their study. In the second chapter L.O. Björn and T.C. Vogelmann describe methods of light quantification, namely the questions of wavelength, direction and shape. Instrumentation in photomorphogenetic research is in detail described in the following chapter by M. Furuya and Y. Inoue. Next 6 chapters are devoted to phytochrome: The Phytochrome Chromophore (W. Rüdiger, F. Thümmler), Phytochrome Genes and Their Expression (P.H. Quail), Assembly and Properties of Holophytochrome (M. Furuya, P.-S. Song), Phytochrome Degradation (R.D. Vierstra), Distribution and Localization of Phytochrome Within the Plant (L.H. Pratt) and Signal Transduction in Phytochrome Responses (S.J. Roux). P. Quail describes the discovery of multiple *phy* genes, their stabilities in darkness and light, deduced phylogeny of phytochrome polypeptides, the structure of the genes and their possible biological functions (it seems for example that *phy B* is responsible for reactuion to R). Also, the regulation of individual phy genes seems to be different. Phototransformation of P_r to P_{fr} and back includes several intermediates. R.D. Vierstra describes phytochrome degradation as a complicated, ubiquitin-dependent process. Any uncertainties are still connected with phytochrome localization - no precise evidence was so far presented for binding of phytochrome to any cell structure. Further chapter by A.L. Mancinelli deals extensively with The Physiology of Phytochrome Action. The chapter deals with photochemical properties of purified phytochrome, phytochrome mediated responses and interaction of phytochrome with other receptors. Further chapter The Use of Transgenic Plants to Examine Phytochrome Structure and Function (J.R. Cherry and R.D. Vierstra) demonstrates many functions of phytochrome demonstrated using plants carrying phytochrome gene(s). Further two chapters (H. Senger and W. Schmidt: Diversity of Photoreceptors, B.A. Horwitz: Properties and Transduction Chains of the UV and Blue Photoreceptors) deal with blue and UV receptor(s) and H. Mohr describes then the coaction between pigment systems. Further part of the book is devoted to The Light Environment (H. Smith: Sensing the Light Environment:, M. Kraml: Light Direction and Polarization, D. Vince-Prue: The Duration of Light and Photoperiodic Responses, T.C. Vogelmann: Light Within the Plant, L.O. Björn: Modelling the Light Environment) and describes the way how light penetrates into plant tissue and how the tissue reacts. Following two chapters represent the most modern approach to photomorphogenesis: The Molecular Biology of Photoregulated Genes (A. Batschauer, P.M. Gilmartin, F. Nagy, E. Schäfer) and Photomorphogenic Mutants of Higher Plants (M. Koornneef, R.E. Kendrick).The book is finished with several specialized chapters: Photomodulation of Growth (D.J. Cosgrove), Phototropism (R.D. Firn), The Photobiology of Stomatal Movements (E. Zeiger), Photomovement (W. Haupt, D.-P. Häder), Photocontrol of Flavonoid Biosynthesis (C.J. Beggs, E. Wellmann), Photomorphogenesis in Fungi (G. Manachere) and Photobiology of Ferns (M. Wada, M. Sugai).

As it is evident from the book content, it covers really a very broad field of the light effects in plants. All the chapters are written by the well known specialists and the text is supplemented with many figures. The book is of highest scientific standard and can be recommended to all researchers in plant photobiology as well as to graduate and postgraduate students.

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