Shewry, P.R., Halford, N.G., Hooley, R. (ed.): **Protein Phosphorylation in Plants**. - Clarendon Press, Oxford 1996. 320 pp., GBP 75.00. ISBN 0-19-857777-X.

Protein phosphorylation and dephosphorylation are key processes controlling plant growth, development, and metabolism. The reviewed book is based on papers presented at the first European meeting on the topic at the Long Ashton Research Station in September 1994.

The 100 authors of 23 chapters of the book work mainly in the U.K. (37), the U.S.A. (28) and France (21); other countries are represented only by 6 (Hungary), 2 (Greece) or 1 (Canada, India, Italy, Norway, Singapore and Spain) author(s). The introductory paper surveys the structure and function of protein kinases, the enzymes that catalyse phosphorylation and dephosphorylation. Ten papers of the following section deal with control of plant metabolism, *e.g.*, sucrose-phosphate synthesis and nitrate reduction, activities of photosynthetic carboxylases and partitioning of photosynthates, circadian CAM rhythms, mitochondrial pyruvate dehydrogenase, phenylalanine ammonia-lyase, serin-threonine protein kinases of the Snf1 class, and with protein phosphorylation in germinating seeds.

Section III (five papers) deals with regulation of cell cycles such as mitosis, cell division, cell cycle-related cDNAs in maize root apex, cyclin-dependent protein kinases in synchronised alfalfa cell cultures, and initiation of DNA synthesis. The last section (seven papers) is on signal reception and transduction: receptor-like protein kinases, abscisic acid signal transduction mediated by calcium-modulated protein phosphatase (stress responses, stomatal aperture control), ethylene signal transduction, calmodulin-like protein kinases, cloning of protein kinase genes, elusin (receptor-like kinase in cell wall), and protein kinases in aleurone cells.

Molecular biological and biochemical aspects prevail in these topics; in the majority of cases also functional models are supplemented. Experiments were done with a broad material, from yeasts to higher plants (often with *Arabidopsis*). A good index of subjects and scientific plant names is supplemented. Nevertheless, I would prefer also a separate list of abbreviations because orientation in some papers is not easy. In summary, it is a very special monograph on a modern topic of plant metabolism.

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