

Briggs, W.R., Jones, R.L., Walbot, V. (ed.): **Annual Review of Plant Physiology and Plant Molecular Biology**. Vol. 42, 1991. - 762 pp., U.S.\$ 40.00 (U.S.A. and Canada), \$ 45.00 (elsewhere).

Methodical papers and reviews belong to the most often cited scientific articles. The best known collections of reviews are certainly those published by the Annual Reviews Inc., namely those of the traditional series. As concern tradition, the second among the 17 branch titles is that dealing with plant physiology (the topic has recently been enlarged by including plant molecular biology).

For volume 42, Erasmo Marre from the University of Milano was invited to write a prefatory chapter. In an interesting article, he describes his life course, experimental experience (regulation, respiration, phosphorylation, protein synthesis, transport, *etc.*) as well as his views on life and science. The 24 following reviews deal with various topics of plant physiology, genetics, biochemistry and biophysics.

Four papers are more or less connected with photosynthesis: they deal with protein phosphorylation in chloroplasts, with chlorophyll fluorescence, metabolite translocators of chloroplast envelopes, and carbon in  $N_2$  fixation. Stress physiology is represented by a review on heat shock proteins. Developmental physiology is represented by six reviews: on differentiation of floral organs, on sperm cells in flowering plants, on circadian rhythms and phytochrome, on root signals in regulation of growth and development in drying soil, on the role of cell wall hydrolases in fruit ripening, and on oligosaccharide signals in fruit development of plants. As concerns the synthesis and metabolism of individual groups of substances, fructan metabolism in cereals and grasses, toxicity and biological functions of thionins, physiological roles of plant lipooxygenases, and glycerolipid synthesis pathways are dealt with. Special physiological topics are sorting of proteins in the secretory system, pH and ionic conditions in the apoplast (that serves as ion exchanger and diffusion barrier), and problems of lichen symbiosis (mainly related to photosynthesis and water relations).

Six papers are devoted to plant genetics. They review the new literature on noduline gene functions in the root-nodule systems, on homeotic genes controlling flower development and evolution, on light-regulated nuclear genes (many of them related to photosynthetic processes), on methods and results of gene transfer to plants, on self-compatibility genes of *Brassica*, and on molecular genetics in hormone biology.

As usually, the volume is supplemented by perfect author and subject indexes.

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