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BOOK REVIEW

MANTELL, S. H., SMITH, H. (ed.): *PLANT BIOTECHNOLOGY*.— Cambridge University Press, Cambridge—London—New York—New Rochelle—Melbourne—Sydney 1983. 334 pp. £ 35.00 H/C; \$ 69.50.

This book is devoted to the rapidly developing field of plant biotechnology. Because biotechnology is a difficult subject to define, it is important to emphasize that it is not synonymous with so-called "genetic engineering". As is shown by the five main chapters, the relative advancement of each branch of the field of plant biotechnology differs widely. The first section of the book provides information on the applications and economics of plant cell cultures as a commercial source of natural plant products on the industrial scale. In this chapter the concept and techniques of cell immobilization is introduced and the use of immobilized plant cells as a means of producing enhanced yields of secondary metabolites is considered. Another section examines the basic principles involved in the propagation of horticultural and agricultural crops and attempts to assess its present standing and limitation. The range of *in vitro* techniques that are available for cloning plants is introduced. Cryopreservation and the maintenance of plant germplasm on the laboratory scale and on the global scale are also essential ingredients to the new phase of plant biotechnology. Two chapters are concentrated on the genetic manipulation and genetic engineering of higher plants. The use of plant cell and protoplast culture for the production, screening or selection of desirable variation in agronomic character is discussed. The expression of eukariotic genes in bacteria and the manipulation and use of specific nuclear genes and plastogenes for the controlled genetic engineering of plants are some of the most recent and exciting fields of research.

Although each chapter presents an overview of a particular branch of plant biotechnology, many of the results and techniques summarized here tend to complement each other. This reality confirms that plant biotechnology can rightly be considered a discrete area of research involving both the fundamental and applied aspects of plant cell biology. The book also indicates trends which plant biotechnology is likely to follow in the coming years. Both students and research scientists have an opportunity to gain information on the various aspects of the development of plant biotechnology or to broaden their knowledge in the field.

HELENA BENEŠOVÁ (Pražka)