

Anderson, H.M., Barlow, P.W., Clarkson, D.T., Jackson, M.B., Shewry, P.R. (ed.): **Plant Roots - From Cells to Systems.** (Developments in Plants and Soil Sciences, Volume 73). - Kluwer Academic Publishers, Dordrecht - Boston - London 1997. 154 pp. NLG 180.00. ISBN 0-7923-4369-7.

Fifteen important contributions from the 14<sup>th</sup> international symposium Plant Roots - From Cells to Systems, held in Bristol 1995, are presented in this book. Ten of them are reprinted from Plant and Soil, volume 187, No. 1 (1996). In comparison with the Volume 58 of the same series (Baluška *et al.* "Structure and Function of Roots") published two years ago, in this book much more attention is paid to molecular biology and less attention to root physiology.

Recently, genes involved in the root initiation and development have been identified; they are described in chapters 1 and 5. The cloning and characterization of ion (potassium, iron, copper and zinc) transport genes opened up new way for the research on plant nutrition (chapters 8 and 12). Certain plant genes are required during all stages of root nodulation (*Rhizobium* - legume symbiosis, chapter 14) or during fungal colonisation in arbuscular mycorrhiza (chapter 13). Three chapters are devoted to the root structure and ultrastructure (chapter 3 to the microtubular cytoskeleton, chapter 9 to the root apical organization and chapter 10 to the root meristem structure) and their importance for root development. The mechanism of turgor-regulation during the extension growth is presented in chapter 2. The present state of mathematical modelling of the most important root function - water transport is reviewed in chapter 7. Four chapters deal with the response of roots to environmental conditions (to the flooding - chapter 4, to the nutrient variability in the soil - chapter 6, to the mechanical stress - chapter 11, and to low temperature and nitrogen forms - chapter 15).

The book is well arranged and produced. The text is accompanied with many tables and figures. It is recommended to all scientists, teachers and advanced students who search deep information in specialized field but not to them who need broad survey of root anatomy and physiology.

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