Lambers, H., Poorter, H., Van Vuuren, M.M.I. (ed.): **Inherent Variation in Plant Growth. Physiological Mechanisms and Ecological Consequences.** - Backhuys Publishers, Leiden 1998. ISBN 90-73348-96-X. 592 pp.; NLG 290.00, USD 152.00 (hardbound).

The differences in growth rates between plants growing in harsh environments, and in more favourable conditions are the main topics of this book. It covers mainly research on inherent variation in plant growth at different levels of integration, physiological mechanisms that account for the differences in maximum growth rate between species, changes in traits that are associated with fast-growing or slow-growing species, *etc.* The book is based on contributions presented to the Workshop on Inherent Variation in Plant Growth Rate held at Utrecht University in June 1997.

Twenty eight chapters written by 57 scientists from Australia, Bolivia, Canada, Colombia, France, Maroc, Russia, Slovakia, Spain, Switzerland, The Netherlands, UK, and USA are arranged in four sections. Section I–Growth and anatomy of roots and leaves (6 chapters)–deals with cell division and expansion, and functional anatomy of plant organs. In 8 chapters of the section II–Carbon metabolism and nutrient acquisition–various components of plant carbon economy are discussed (photosynthesis, respiration, mineral nutrition and root exudation, and allocation) with respect to fast- and slow-growing plants. Besides, a chapter dealing with transgenic plants as a tool to analyse the mechanistic basis for variation in plant growth is presented. In the section III (8 chapters)–Growth analysis of individual plants–the variation in growth rate of species from contrasting environments or different life forms is analysed (alpine and lowland species, herbaceous and woody plants, tropical trees). Growth rate and carbon partitioning as affected by environmental factors are also analysed, and statistical modelling using structural equations proposed. Six chapters of the last section IV–Consequences for ecosystem functioning–are devoted to responses of various traits to contrasting habitats (leaf or root turnover rate, competition between species during succession, adaptation to nutrient-poor environments, nitrogen-use efficiency, phylogeny and variation of light capture area, *etc.*). The final chapter written by the senior editor Hans Lambers–Epilogue: Research on the control of plant growth - where do we go next?–is an excellent summary of the topics discussed on the workshop and presented in the book: the state of art of our knowledge is evaluated and challenges for research during the next decade are identified.

The book is well edited and produced. A useful list of abbreviations and definitions related to growth analysis, together with units and dimensions used in this book, is presented by the editors in the introduction. All the chapters enclose extensive lists of references to the world literature which, together with carefully prepared Subject and plant, and Author indexes, will surely be welcome by any reader. The volume should be recommended to all plant scientists and postgraduate students engaged in plant and ecosystem functioning in different environments.

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