

M. ČECH, HANA BRANIŠOVÁ (Praha): **Nesouvislost mezi příznaky a obsahem viru zelenoskvvrnitě mozaiky okurky (Cucumber virus 4, Knight) v různých kultivarech okurky.** — Biol. Plant. 18 : 58—62, 1976.

V deseti kultivarech okurky (*Cucumis sativus* L.) infikovaných virem zelenoskvvrnitě mozaiky okurky (CV 4, Knight) se porovnával maximální obsah viru (stanovený spektrofotometricky po centrifugaci v hustotním gradientu) s intenzitou příznaků. Vedle rezistentních, náchylných kultivarů a bezpříznakých nosičů viru byla nalezena nová paradoxní skupina, vyznačující se nízkou reprodukcí viru a velmi silnými příznaky. V této skupině lze obtížně přenášet i čistit virus. Z pokusů vyplývá, že ke kritickému posouzení rezistence vůči virům ze skupiny viru tabákové mozaiky je nutné doplnit sledování příznaků kvantitativní analýzou obsahu viru, protože mezi příznaky a reprodukcí viru v rostlině nemusí být přímý vztah.

BOOK REVIEW

ZIMMERMANN, U., DAINTY, J. (ed.): **Membrane Transport in Plants.** — Springer-Verlag, Berlin-Heidelberg-New York 1974. 473 pp.

This book represents the proceedings of the symposium "International Workshop on Membrane Transport in Plants" held at the Nuclear Research Centre, Jülich, FRG in February 1974. More than two hundred and fifty scientists from fourteen countries took part in this meeting. The members of the programme committee (U. Zimmermann, J. Dainty, F. Führ, N. Higginbotham, A. B. Hope, A. Lev, U. Lüttge, H. W. Nürnberg, E. A. C. MacRobbie, H. Stieve, M. Thellier, K. Wagener) decided on a very broad spectrum of topics including thermodynamics of transport processes, water relations, primary reactions of photosynthesis, as well as the more conventional aspects of membrane transport. Like the symposium, the book is divided into nine sessions; each session contains 4 to 13 papers and a record of the round table discussion.

The contributions to Session 1 (Thermodynamics and Electrochemistry of Membrane Transport) give basic knowledge of the transport processes and chemical reactions across membranes. Session 2 (Water Transport and Osmotic Processes) dealt with transport of water at cellular level as well as bulk water movement in the shoots. Special attention was given to some parameters such as the hydraulic conductivity or the volume elastic modulus and their volume- and pressure-dependence and to osmoregulation and turgor pressure regulation. The next, Session 3 (Electrical Properties of Membranes), is focussed on the nature of biological membrane potentials and the relationship of those potentials to metabolism, on the transport of ionic substances and the transport of uncharged substrates. Special attention was given to the light-dependent changes in membrane potentials closely linked to the photosynthetic reactions. The biggest Session 4 (Solute Transport in Algae and Cellsuspension Cultures) contains 13 papers dealing with transport of ions (Cl^- , H^+ , phosphate, sulphate, etc.) and organic substances connected with electron transport processes of photosynthesis, photophosphorylation, permeability, and thermodynamics. The objects were mostly algae. Photosynthesis is the subject of Session 5 (Transport in Isolated Chloroplasts). Proton transport in chloroplasts is explained by chemiosmotic theory as a process connected with photosynthetic electron transport and characterized by changes in chlorophyll energetics *in vivo* (variable fluorescence and delayed fluorescence). Session 6 (ATPases and Transport) contains only four papers dealing with stimulation of ATPase activity by monovalent or divalent cations and of another membrane bound ATPase by anions and correlations between those ion-stimulated ATPases and ion uptake. The round-table discussions are included in Session 7 (Kinetics of Transport). In this session special attention was given to interpretation and use of influx isotherms. Session 8 (Transport in Organs of Higher Plants) is very wide because it includes various systems of supply and demand of particular substances, their structure and ultrastructure, transport mechanisms and methodical approaches to these problems. The last, Session 9 (Regulating Factors in Membrane Transport) is devoted to the influence of plant hormones, growth regulators and metabolic inhibitors on transport processes.

The book may be recommended as a very recent source of information for research workers, particularly because it is intended to bring advanced thermodynamical concepts to the attention of biologists and to show physical chemists what the more complex biological systems are like. Thanks to the great effort of the editorial board to make the submitted manuscripts uniform, to redraw figures and so on, the book is a homogeneous unit, understandable to a wide circle of readers working in this field. It is well produced and its text is illustrated with 252 graphic figures and 49 tables. A subject index is also included.

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