

Report on an International Scientific Colloquium

The Higher Plant Cell: Potentials and Limitations

Organizer: Prof. Dr. H.G. Schweiger; chairman: Prof. Dr. J. Straub

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The colloquium was held in honour of Professor Dr. Georg Melchers, late scientific member at the Max-Planck-Institut für Biologie in Tübingen on the occasion of his 75th birthday. Twenty-five scientists from Denmark, the Federal Republic of Germany, Switzerland and the United States of America were invited to deliver lectures on their research interests.

A. Lang presented a survey on grafting experiments with higher plants which revealed evidence for a substance called florigen that induces flower formation, as well as for antiflorigen which inhibits the process. Two papers were concerned with the structure of ribosomes. B. Wittmann-Liebau reviewed various investigations of ribosomal proteins, their structures, location of genes and evolutionary aspects. The topic of H.G. Wittmann was the architecture of ribosomes, the location of certain proteins and the significance of secondary protein structure in the assembly to the functional bodies. P. Starlinger reported on insertion elements at genes of sucrose synthetase in maize inducing polar mutations. J. Schell described experiments leading to the formation of octopin producing tobacco plants of normal growth pattern. Transformation was achieved by a ti-plasmid mutant lacking the information for the tumor inducing principle. Plants cloned via protoplast culture exhibited mendelian segregation of octopin +/- . D. von Wettstein presented information on the structure of the ribulosebiphosphate carboxylase gene as revealed mainly by cDNA investigations, on the location of storage protein genes in *Hordeum*, and on transformation experiments in yeast in

which the transferred histone gene was stabilized during meiosis. R.G. Herrmann summarized the results of investigations on the plastid genome of higher plants.

Further lectures were concerned with sulphur metabolism in cell cultures (L. Bergmann), organogenesis in tissue cultures of *Brassica napus* (H.W. Kohlenbach), protoplast regeneration in the class of Magnoliatae (H. Binding), culture of cereal protoplasts and mutant selection in cell cultures (I. Potrykus), transplantation experiments in mice (H. Jokusch), contractile proteins (B. Jokusch), indirect immunofluorescence in plants (P. von Sengbusch), volatile substances as markers in tomato + potato protoplast hybridization (H. Ninnemann), necroses in the TMV/ tobacco system (K.-W. Mundry), CMV as a proposed vector in genetic engineering in plants (T. Hohn), plant protoplasts in virus research (S. Sarkar), mutants in plant cell cultures (G. Weber), resistance breeding on the cellular level (M. Sacristán-Alailly), asymmetric somatic hybrids of *Arabidobrassica* (F. Hoffmann), variability in somatic hybrids of *Datura innoxia* + *Atropa belladonna* (O. Schieder), resistances to aminoacid analogues as markers in protoplast fusion experiments (C. Harms), trials on the resynthesis of *Brassica napus* by protoplast fusion of the supposed parents (H.R. Schenck), and potato as a model system for in-vitro techniques in applied research (G. Wenzel).

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