

## Comparative functional genomics of chloroplasts, mitochondria and their bacterial homologues: New perspectives on symbiosis in cell evolution

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Chloroplasts and mitochondria are energy-converting organelles of eukaryotic cells. They also contain small, specialised, functional genomes. While their genetic and energy-converting systems are evidently bacterial in origin, most genes for chloroplast and mitochondrial components now reside in the cell nucleus. So why did some genes move, while others did not?

The above subject was the focus for a Royal Society Discussion Meeting held on 26 and 27 June 2002 and will be published as an individual volume of *Philosophical Transactions: Series B* in January 2003.



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All papers presented at the Meeting\* are listed overleaf ...

\* The published contents may vary from those listed overleaf

## **Symbiosis and genome function**

The roles of cyanobacteria and proeobacteria in symbioses with eukaryotes

*John A Raven, University of Dundee, UK*

Secondary symbiogenesis and eukaryote evolution

*Tom Cavalier-Smith, University of Oxford, UK*

Redox control of gene expression as the function of genomes in bioenergetic organelles

*John F Allen, Lund University, Sweden*

## **Bacterial homologues of compartments and organelles**

How big is the iceberg of which organellar genes in nuclear genomes are but the tip?

*W Ford Doolittle, Dalhousie University, Nova Scotia, Canada*

Hydrogenosomes: unusual organelles of anaerobic ATP synthesis in amitochondriate protists and their possible evolutionary significance

*Heinrich-Heine University, Düsseldorf, Germany*

On the origin of mitochondria: a genomics perspective

*Siv Andersson, Uppsala University, Sweden*

Similarities in bacterial and plant light perception

*Carl Bauer, Indiana University, USA*

## **Chloroplasts**

Evolution of the chloroplast genome

*Christopher J Howe, University of Cambridge, UK*

Thylakoid biogenesis and dynamics: the result of a complex phylogenetic patchwork

*Reinhold G Herrmann, Ludwig Maximilian's University, Munich, Germany*

Coordination of plastid and nuclear gene expression

*John C Gray, University of Cambridge, UK*

Parasite plastids: maintenance and functions

*RJM (Iain) Wilson, National Institute for Medical Research, London, UK*

## **Mitochondria**

Integration of the mitochondrial genome in the plant cell

*Axel Brennicke, University of Ulm, Germany*

Mitochondria and hydrogenosomes: two different faces of the same organelle

*Martin Embley, Natural History Museum*

Evolutionary aspects of anaerobically functioning mitochondria

*Aloysius GM Tielens, Utrecht University, The Netherlands*