



**Simposio Internacional:** Evolución por cooperación. La obra de Lynn Margulis (1938-2011)

**International Symposium:** *Evolution by cooperation. The work of Lynn Margulis (1938-2011)*

Madrid, 12 y 13 de noviembre de 2012

*Madrid, November 12-13, 2012*

## **Cellular symbiosis and metabolic evolution**

**Juli Peretó**

Cavanilles Institute of Biodiversity and Evolutionary Biology, Department of Biochemistry and Molecular Biology, University of València, and Institut d'Estudis Catalans

The theory of symbiogenesis, proposed by Boris Kozo-Polyansky Mikhaylovich (1890-1957) and deployed in all its explanatory power by Lynn Margulis (1938-2011), allows the study of the emergence of new structures, metabolisms and behaviours from the association of different species. Actually there is an ancient connection between endosymbiosis and metabolic evolution in eukaryotes since associations with prokaryotic microorganisms have been present and recurrent throughout their evolutionary history. One of the best studied cases are the metabolic symbiogenesis between insects and bacteria, which have occurred independently many times during the last 300 million years, producing numerous mergers of the branches of the tree of life. A conspicuous outcome of symbiogenesis is that all eukaryotes are really metabolic mosaics.

\*Todos los derechos de propiedad intelectual son del autor. Queda prohibida la reproducción total o parcial de la obra sin autorización expresa del autor.

© FUNDACIÓN RAMÓN ARECES. Todos los derechos reservados.

*\*All intellectual property rights belong to the author. Total or partial reproduction of the work without express permission of the author is forbidden.*

© FUNDACIÓN RAMÓN ARECES. All rights reserved.