



ANNUAL LECTURE

THE CHEMICAL ORIGIN OF LIFE IN HYDROTHERMAL VENTS: NEW PERSPECTIVES

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**The Linnean Society,
Burlington House, Piccadilly, London**

**Wednesday 3rd December 2008, 6pm
(following AGM at 5pm)**

**The meeting is open to visitors
Wine will be served after the lecture to members and guests**

Abstract:

Most recent thinking on the origin of life and the earliest phases of evolution has focused on aspects of chemical synthesis, organisation, information and replication. However, all living systems have at the core of their biochemistry a redox potential that is harnessed as chemical energy. This in turn facilitates the myriad of side reactions that permit the substance of life to progress. Assuming that life has not forgotten how it arose, the trace of its biochemical origins should be preserved somewhere within the metabolism of modern organisms. I will present a novel hypothesis that focuses on the interaction between eubacterial and archaebacterial biochemistries and hydrothermal fluids. This suggests that compounds such as CO or methyl sulphide, present in hydrothermal fluid by virtue of serpentinization processes in the Earth's crust, could have been essential to life's origin, with the transition to free-living cells entailing the ability to survive on H₂ and CO₂ alone.