

A joint meeting of the Geological and Linnean Societies to celebrate the 300th anniversary of the birth of Carl von Linné (Linnaeus), the Bicentenary of the Geological Society, the International Year of Planet Earth and the 30<sup>th</sup> anniversary of the discovery of deep sea hydrothermal vents

# Dark energy and the history of chemosynthetic life in the deep sea

Monday April 23rd, 2007, 2 pm, Geological Society, Burlington House, London

## Programme for afternoon:

- 2pm Tea, coffee and biscuits served in **Geological Society rooms, Burlington House**
- 2.30pm General welcome and introduction by Dr. Richard Fortey FRS, President, Geological Society
- 2.40pm **The geology behind hydrothermal vents and cold seeps**  
Professor Joe Cann, University of Leeds  
Vents and seeps are found in several different geological environments. In the sites near mid-ocean ridges the sulphide and methane-rich fluids which are the basis for chemosynthetic life are primary products from the deep Earth. In other sites the fluid chemistry relies on recycled organic matter from sediments. An interesting question is whether hydrothermal vents can host chemosynthetic communities when the oceans are anoxic, such as in the Cretaceous and in the Archaean
- 3.25pm **Where the Wild Things Are: biogeography and biodiversity of chemosynthetic faunas**  
Professor Cindy Lee Van Dover, Duke University Marine Laboratory  
Deep-sea experiments and long-term monitoring are giving us increasing insights into the ecology of chemosynthetic communities, allowing us to investigate energy flow and succession. It is also becoming apparent that there are a number of biogeographic realms for vent communities in particular, whose basis is not yet fully understood
- 4.10pm Refreshment break
- 4.40pm **Chemosymbiosis: animal - microbial interactions**  
Dr. Nicole Dubilier, Max Planck Institute for Marine Microbiology  
The basis for the high productivity in chemosynthetic communities is in large part due to the symbiotic relationships between chemoautotrophic bacteria and the animals which dominate the communities in terms of biomass. These interactions are often intimate and recent research shows them to be surprisingly phylogenetically complex
- 5.25pm **Fossil perspectives on chemosynthetic ecosystems**  
Dr. Crispin Little, University of Leeds  
Vent, seep, whale and wood-fall communities all have fossil records, for vents stretching as far back as the early Proterozoic or possibly even the Archaean. The idea that chemosynthetic sites are refuges for ancient organisms will be investigated
- 6.10pm **Reception and buffet supper**  
**Linnean Society rooms, Burlington House**  
10 minute welcome by Professor David Cutler, President, Linnean Society
- 9.00pm End