**Aquarium observations on the behaviour and nutrition of animals from the hydrothermal vents at the Menez Gwen site on the MAR**

Paul Dando[1], Sophie Pendlebury[2], Christopher Pham[3], Ana Colaço[3]

[1]Marine Biological Association of the UK; pdando@mba.ac.uk
[2]School of Ocean and Earth Science, University of Southampton
[3]IMAR, DOP- Department of Oceanography and Fisheries, University of the Azores

Mussels, Bathymodiolus azoricus, limpets, Lepetodrillus atlanticus and a crab, Segonzacia mesatlantica were kept alive in aquaria supplied with methane and sulphide for over 5 months. They were observed under red light using time-lapse video in tanks or in a respirometer. All showed periodicities in their behavior. Mussels showed individual periodicities in valve opening and closing but this was modified in the presence of methane and sulphide, although they showed no ability to move towards a methane source. In the presence of sulphide mussels moved towards low concentrations but closed their valves when concentrations were 80 µM or higher. They were able to grow on methane alone, after a lag period, at rates up to 66 µm day-1 and on sulphide alone at rates up to 34 µm day-1, similar rates to those found at the vents. Limpets were observed grazing on other limpets (Lepetodrillus and Shinkailepas) mussels, sulphide minerals, on films of sulphur-oxidising bacteria and on sedimented phytoplankton. The patterns on the L. atlanticus shells are due to clusters of bacteria, which are lost if the limpets are kept in seawater and fed with algae. They graze on the shell bacteria of other limpets. The limpets returned to the same location in a tank after grazing but, unlike the crab, did not exhibit a tidal periodicity. L. atlanticus were also observed filter feeding and their habit of forming temporary towers probably facilitated this.