

### **SCOR Working Group # 120**

The end of 2006 will see the publication of the proceedings of the final meeting of Working Group # 120: “*Phaeocystis*, major link in the biogeochemical cycling of climate-relevant elements”, in the journal ‘Biogeochemistry’. The meeting was held in the Netherlands at the end of 2005. Those present (46 scientists from 11 countries) concluded that we are now able to define the most prominent gaps in knowledge.

A review on taxonomy addressed one of the most important uncertainties that trouble many attempts to improve our understanding of this organism, i.e. the crucial yet very complex issue of strain diversification. The intricate life cycle of *Phaeocystis* makes it even harder to decipher the role of this organism in biogeochemical cycles. The various stages that make up the life cycle, a phenomenon that is typical for this organism, concur with striking modifications in size and shape. These modifications may well determine the success of *Phaeocystis* as a cosmopolitan species. Moreover, they are crucial for the fate of the organic carbon represented in the cells and in the mucus of the colonies. Therefore, an ecophysiological perspective provides essential insights to come to a full understanding of the biogeochemical function of *Phaeocystis* in the marine ecosystem.

This biogeochemical role is tightly linked to ecosystem dynamics. Low in ecosystem hierarchy, viruses play an important, sometimes decisive role in the functioning and fate of *Phaeocystis* blooms. The community of grazers furthermore determines the fate of *Phaeocystis*. Grazing activity and cell lysis not necessarily shape the export system, but also other factors control carbon fluxes.

A substantive effort in studies on *Phaeocystis* is focussed on its role in sulphur cycles by the production of dimethylsulphoniopropionate (DMSP). A review now bridges the gap between field scientist and modellers. Models exist in a wide variety, covering a vast area from the cellular level to global processes. All participants at the final meeting of SCOR WG #120 expressed interest in continuation as a “*Phaeocystis* scientists community”, with potential collaboration on the level of data exchange and joint filed work.