

SCOR/IGBP working group on modern planktonic foraminifera kicked off

Amsterdam, The Netherlands, 29 August - 2 September 2011

GERALD M. GANSSSEN¹ AND MICHAL KUCERA²

¹Department of Earth Sciences, VU University, Amsterdam, The Netherlands; g.m.ganssen@vu.nl

²Department of Geosciences, University of Tübingen, Germany; michal.kucera@uni-tuebingen.de

Planktonic foraminifera have been the true heroes of paleoceanographic research since the birth of the discipline. The ornate shells of these microscopic amoebae are arguably the most important carriers of paleoclimate information available to scientists. Our ability to reconstruct past climate states and comprehend biotic responses to changing oceanic conditions depends on a complete understanding of their ecology, biology and physiology. The quantitative unravelling of the mechanisms by which they incorporate geochemical tracers into their shells is crucial for reconstructing oceanic temperature, pH and salinity.

In recent decades, research on these aspects of planktonic foraminifera has been lagging behind the rapid development of sophisticated geochemical tools and numerical ecological models and their application. To bridge this gap, the Scientific Committee on Oceanic Research (SCOR), together with the International Geosphere Biosphere Programme (IGBP), jointly established a new working group (WG) in 2011, with the aim to stimulate new research, benchmark the current knowledge and disseminate the results to a broad audience. For details of the proposed work of the group, please visit: www.scor-int.org/Working_Groups/SCOR_WG_Foraminifera_revised.pdf.

The first workshop of the SCOR/IGBP Working Group 138 on "Modern Planktonic Foraminifera and Ocean Changes" took place in a stimulating atmosphere of the medieval monastery environs of "Het Bethanienklooster" in Amsterdam. The participants (WG members and invited guests) of the kick-off workshop set the priorities for future work, specified the terms of reference and shaped and planned the deliverables. Specifically, the WG agreed to

a) set-up a Web-based network in cooperation with ongoing (inter)national research programmes and projects to guarantee an open-access, world-wide dissemination of results, data and research plans and

b) to synthesize the state of the science of modern planktonic foraminifera,



Figure 1: Light micrograph of a living *Orbulina universa* caught off Southern California. This specimen illustrates the complex ecology and physiology of modern planktonic foraminifera, which need to be fully understood to make the most of the geochemical proxy signals, locked in their calcite shells. A dense network of calcite spines and rhizopodia surround a new spherical shell, providing a daytime habitat for thousands of dinoflagellate symbionts (yellow spots) that are distributed along the spines. Symbiont-derived nutrition is supplemented by feeding on crustaceans and other planktonic organisms. Here, *O. universa* has been fed a laboratory-grown *Artemia* nauplius whose tissue is digested in vacuoles inside the shell. The shell is approximately 0.5 mm across. Photo: Howard J. Spero, University of California Davis.

from pioneering to ongoing research as an eBook or a special issue of an open-access journal. Contents for this forum compendium were drafted. The group decided that eForams (<http://eforams.org>) will be used as the Internet platform for the deliverables of the WG. The "WG138-eForams fusion" will thus represent an innovative experiment in developing new ways of science dissemination. In the same spirit of innovation in communication with its stakeholders, the WG has documented its aims in short video clips, which are freely available on the Internet (under: *A Forams Tale* on YouTube).

In order to expose the aims of the WG to young researchers, the kick-off meeting was accompanied by a one-day focus symposium. It was attended by 18 early-career researchers from six countries and featured keynote presentations by Michal Kucera on genetic diversity and Howie Spero on calcification mechanisms and shell chemistry. The participants were briefed on the prog-

ress of the WG and engaged in discussions during the day, over posters and during the scenic canal boat trip in Amsterdam (*SCOR Amsterdam meeting* also on YouTube). On the morning of the following day, the participants including WG members, guests and young researchers reviewed the deliverables and considered the time plan and modalities to achieve the completion of the ambitious aims of the group.

This marked the closure of the workshop, where the pleasant and open atmosphere set the pace for the work of SCOR/IGBP WG 138. The workshop constituted an excellent opportunity for the group of experts, who met in this form and constellation for the first time, to review the current status and most recent developments in modern planktonic foraminiferal research and engage in exciting and stimulating discussions with the next generation of scientists.

