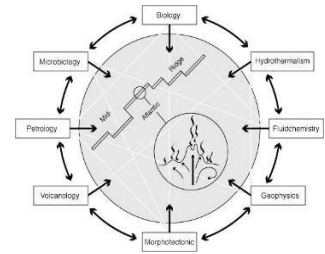




MSM 10/3

Jan. 11th – Feb. 13th, 2009

1st weekly report



The German research vessel Maria S. Merian set sail from Las Palmas on the Canary Islands with 14 scientists, 8 ROV (remote operated vehicle) crew members and 23 crew members, to investigate the Logatchev hydrothermal vent field at 14°45' N, 44°58' W on the Mid-Atlantic Ridge (MAR). This cruise is part of the German Science Foundation's Priority Program "From Mantle to Ocean" (SPP 1144) in which scientists are working together to better understand the geology, chemistry, and biology of hydrothermal vents on the slow-spreading MAR. We have scientists from the Max Planck Institute for Marine Microbiology, the IFM-Geomar, the University of Kiel, the University of Hamburg, the Jacob's University Bremen, and the French CNRS (Biological Station of Roscoff) on this cruise.



Fig. 1: Harbor test of the ROV Kiel 6000 in Las Palmas

Our containers were released from customs later than originally planned, delaying the begin of our cruise by three days, but giving us plenty of time in Las Palmas to enjoy its lovely tapas bars and freidoras (small fish restaurants) along the beach promenade. Thanks to the hard work of the crew, the ROV was mobilized and successfully tested in the harbor in only 2.5 days. We have the ROV Kiel 6000 on board with the Kiel ROV crew and the additional support of a ROV pilot from MARUM, Bremen. We will use the ROV to dive to the 3000 m deep seafloor of the Logatchev vent field, collect samples and recover instruments we put out one year earlier during a previous SPP 1144 cruise.

On the second day of our transit to Logatchev we made a little detour to a seamount to do bathymetric mapping with the Merian's multibeam echo sounder. The seamount is interesting because it may be active, but neither plate tectonics nor what we know about hot spots can explain this activity. A ROV test dive at the seamount down to 1800 m water depth was successful and we saw hard black structures that looked like lava flows and typical seamount fauna such as sponges (Fig. 2), gorgonian sea fans, ophiroid bristle stars, and galatheid squat lobsters. A more extensive mapping of the seamount is planned during a later IFM-Geomar cruise with the RV Poseidon.

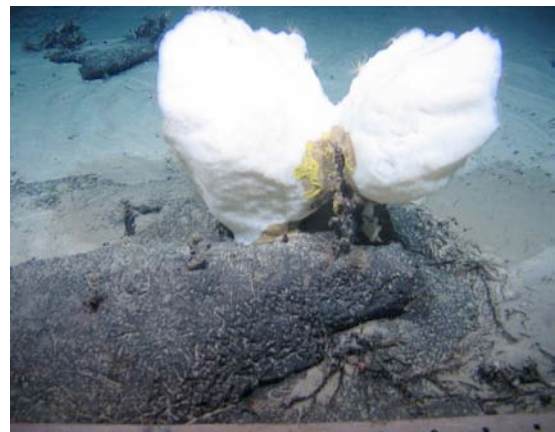


Fig. 2: Seamount sponge (copyright: IFM-Geomar)



Fig. 3: Fritz Abegg, the scientific ROV team leader, explaining the ROV Kiel 6000 to the scientists

The scientists used the 6 days transit to Logatchev to set up their labs and get their instruments and equipment ready, while the ROV crew was busy preparing the ROV for station work. In the evenings, the scientists gave talks about their research and the work they have planned for this cruise and the ROV team gave us a little introduction to the Kiel 6000 (Fig. 3).

Thanks to strong tail winds we reached Logatchev on January 17th and on the evening before celebrated our arrival (and the common birthdays of both the 1st officer and the chief scientist on that day) with a fantastic barbecue that the cook and steward prepared on the back deck of the ship.

One of our first tasks was to deploy a mooring about 5 nm away from the Logatchev vent field in 4000 m water depth (Fig. 4). The mooring is 120 m long and has instruments (5 MicroCats and 5 RCM current meters) that will continuously measure the temperature, salinity, and current velocities over the next two months. The mooring is anchored on a sill between two valleys north of the Logatchev area, and will give us a better understanding of how seafloor topography influences mixing processes in the water column near the vent field.

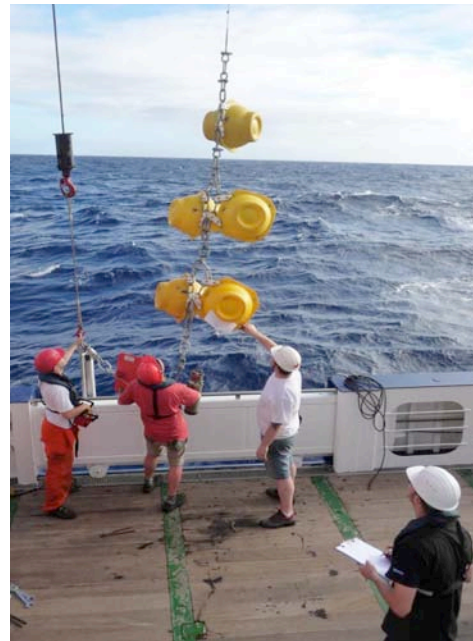


Fig. 4: The yellow buoyancy spheres are hooked on to the 100 m mooring so it will float in the water column

On the morning of the 18th we had planned our first ROV dive, but were disappointed to wake up and see no change in the weather we have been having for several days now: winds up to 7 bft and high waves. So instead, we ran CTDs and deployed 6 of 12 Ocean Bottom Seismometers that will be spread out in a grid across the Logatchev vent field to record seismic activity. These will collect data for two months and then be recovered together with the mooring during a SPP 1144 cruise with the Poseidon in March.

The support of the ship's crew is exceptional, they are going out of their way to help us with even our smallest requests. Aside from a few problems with queasiness at the beginning of the transit for some of our students that are on their first cruise, we are now all in good spirits, and enjoying the warm and sunny weather while hoping for calmer seas for diving.

Nicole Dubilier and the scientific crew of MSM10/3
January 18th, 2009