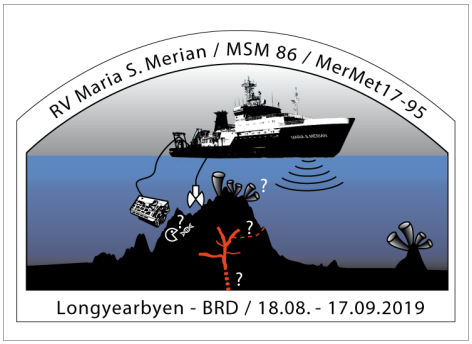
FS Maria S. Merian Expedition MSM-86
Longyearbyen – Emden (18.8. – 17.9.2019)

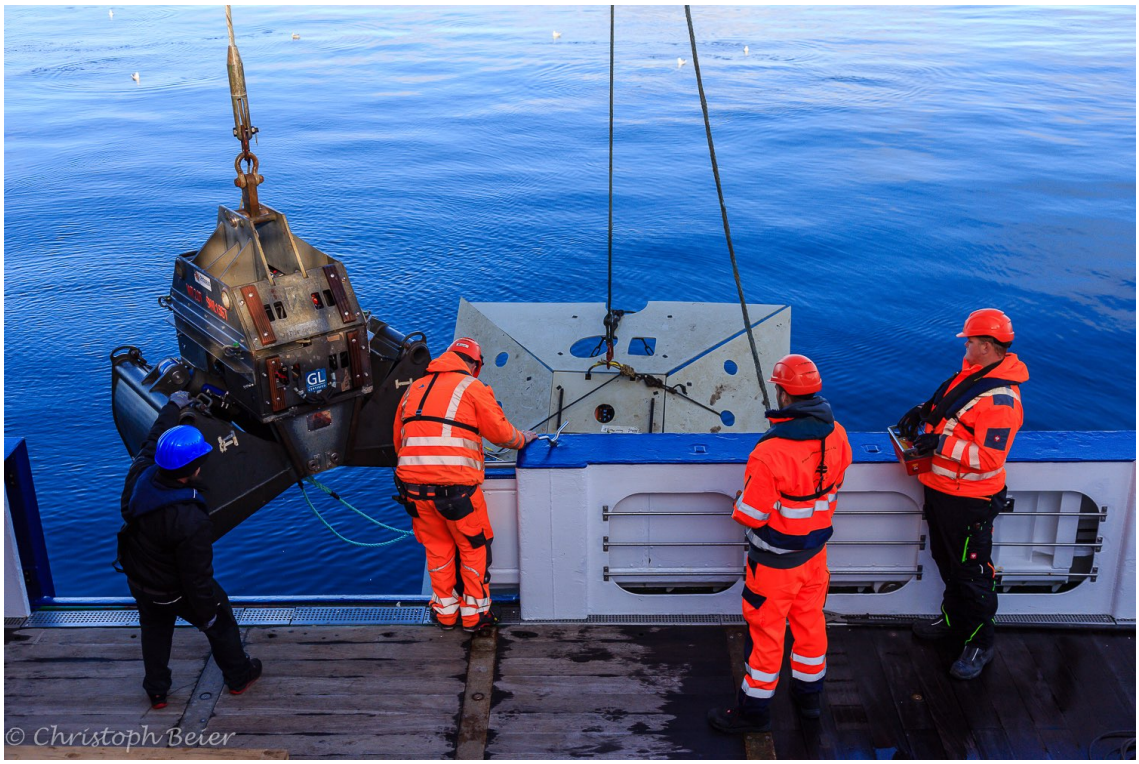


First Weekly Report

Our cruise started on August 18, when we left the harbor of Longyearbyen on Svalbard. The target of your expedition is Vesteris Seamount in the Greenland Sea, which is southwest of us. But we went north instead to go to Vestnesa Ridge off the coast of northwestern Svalbard. There, we were charged to retrieve instruments our colleagues Achim Kopf und Gerhard Bohrmann from the MARUM Center for Marine Environmental Sciences left behind three years ago to produce time series measurements of seafloor parameters. In this retrieval mission, were able to test both seafloor sampling devices we brought onboard: The TV-guided grab from GEOMAR in Kiel and the remotely-operated vehicle (ROV) SQUID2000 from MARUM in Bremen.

The last batch of cruise participants are being brought to the ship (foto by Beate Slaby)

Retrieval of the instruments was no trivial task, and we did not much time to get prepared. Yet, we managed to recover both instruments thanks to the innovative spirit of the Master and his crew as well as the technical staff operating the equipment. A 500-kg seafloor system for monitoring gas-discharge was picked up skillfully by hooks mounted to the bottom of the TV-grab. The second instrument to be salvaged was installed in a borehole 2016 and could be unscrewed from the wellhead by ROV SQUID2000.

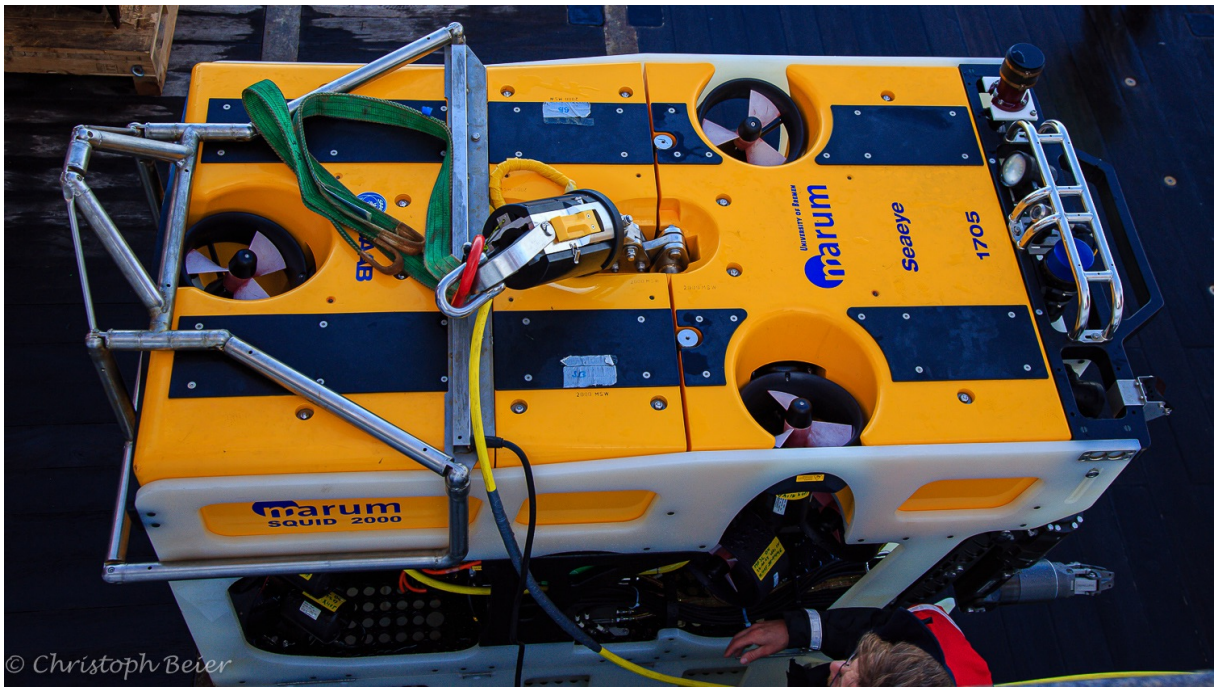


Recovery of a seafloor observatory platform on Vestnesa Ridge, Svalbard (foto by Christoph Beier)

After this promising start, we transited for two days to our actual work area. Vesteris Seamount is a young volcano, which erupted many times in the past 500,000 years and is considered presently dormant. It rises more than 3000m above the abyssal plain in the Greenland Basin and comes up to only 140 m water depth. Its composition is strange for a volcano this size and resembles that of very small volcanic fields, like those in the Eifel in Germany. We are here to find out why Vesteris Seamount could grow this big! To solve this mystery, we need to map the volcano precisely and take many samples of volcanic rocks for geochemical investigations. Scientists from Erlangen, Bremen and Helsinki work together in this project. Another group of scientists on board is tantalized by the astounding ecosystems that have developed on the slopes of the volcano. Scientists from Kiel and Göttingen are particularly interested in the sponges and the microbial communities inside them. Geobiologists from Hamburg, Stockholm and Vienna, in turn, are looking to find out about the make-up and functioning of life on top and inside(!) the rocky seabed.

In the evening hours of August 21st we started our sampling campaign, and to this date we already collected a very large number of samples of rocks and biota from water depths between 140 and 2340 m. Long after the sampling systems are back on board, people are busy in the science labs preparing samples for the detailed and comprehensive analyses to be conduced in the home universities.

Superb maps are essential for us to do our science. The ship has state-of-the-art echosounding systems that produce amazing topographic maps of the seafloor. This mapping is happening while the grab and ROV are not in use.



ROV SQUID2000 of the MARUM in Bremen on board of the MSM (foto by Christoph Beier)

The spirit on board is great; we have lots of work to do and get along very well. The catering on board is fantastic and we are all-around taken care of extremely well.

With kind regards, also on behalf of the entire science party,

Wolfgang Bach At sea 73°30'N, 9°10'W August 25, 2019