

5. Wochenbericht (24.–30.09.2018)

Our last expedition week was dedicated to research at Formigas Bank. We managed to deal with four transects with the CTD, the underwater camera and the two small grabs – a yield that we had not dared to hope for when we started our journey. The Formigas Bank is a seamount located northeast of Santa Maria, whose westernmost tip in the form of a small rock reef stands out even a few meters above the water surface. Today, a lighthouse sends its warning light across the ocean, but in earlier times, many a sailor fell victim to this reef, especially at night, when the rocks are not visible at all.

A special concern was to use the underwater camera on two crossing transects to haul them over the ridge (about 50m depth) at a speed of 0.5 knots from a depth of about 150m. On the one hand, we wanted to see what sediment awaits us and whether we could use the grabs at all. On the other hand, we wanted to document the changes that would show uphill.

While fine to medium-fine sand with high biogenic proportions could always be found at a depth of approx. 150m (Fig. 1), where our grabs brought out very good sediment samples, we were able to detect extensive tang forests at a depth of about 50m on our journey (Fig. 2). We had assumed to find large, macroalgae-covered areas also at appropriate depths on the islands studied, or at least the Princess Alice Bank, but to our surprise, we had never found anything! The entire sublittoral area in the study area is remarkably poor in large, bottom-living organisms and large algae. The fact that the Formigas Bank has extensive algae areas may well be due to the fact that it has been strictly protected for many years and, for example, any fishery is absolutely prohibited; that was also the reason for our initial fear that we would not be allowed to work there.

In addition to the two crossing transects, we were able to sample two more sections. So, we received a fair amount of sediment (and algae) samples from Formigas Bank.

The last sediment-laden grab came back to deck yesterday afternoon with station number M150_676. We drove more equipment deployments during this five-week journey than all previous METEOR expeditions this year!



Figure 1: Transect T16, Formigas Bank, about 150m water depth. The bright, fine sediment is easily recognizable.
Photo: M. Wilsenack.



Figure 2: Transect T16, Formigas Bank, about 50m water depth. Extensive seaweeds provide a picture of lush growth that offers food and shelter to a variety of animal organisms. Photo: M. Wilsenack.

Until our departure to Ponta Delgada on Tuesday morning, two additional transects are alternately traversed to make flow measurements over the seamount using the ADCP - the "Acoustic Doppler Current Profiler". These measurements, which last for several days and

are always run over a period of 12 hours on each of the two sections, are intended to shed light on possible influences and effects of tidal currents on the Formigas Bank.



Figure 3: The travel team of scientists M150 BIODIAZ. Photo: S. Seidel.

In the meantime, everyone is packing the boxes, and also cleaning the laboratories has already begun. Tomorrow, Monday, the containers will be packed, so that we have done all the work at midday on Tuesday before our arrival in Ponta Delgada.

In the name of Science (Fig. 3), I would like to sincerely thank Captain Korte and the entire crew of METEOR for their energetic help and support on this successful and beautiful journey. We could not have done much without the competent help from the machine, the crew and the ship's command! Devices had to be repaired, nets patched and course and speed kept accurate (camera profiles!), and we could always rely on everything being provided and undertaken purposeful and to our satisfaction! In addition there was a consistently excellent food, which we enjoyed three times a day to the fullest, and the always warm service by the stewards – also you and the caboose is our sincerest thanks!

Last but not least, we would also like to express our heartfelt thanks to Mr. Andreas Raeke; his comprehensive weather reports have been instrumental in planning and executing the

work in advance. Once again it was an extremely successful and unforgettable research cruise with RV METEOR!

We say goodbye to our readers and wish them all the best! But we wish both METEOR and its crew good and successful rides, and: See you next time!

In the name of all participants of the cruise I send you very warm greetings



Kai Horst George
Chief scientist