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On Friday Antarctica welcomed us with beaming sunshine, majestic icebergs, and a calm sea. The first penguins and seals were sighted resting on the sea ice after foraging in the ocean. On Wednesday the water temperature dropped from 3°C to little above freezing over the span of a few hours. This drop in temperature marks the Antarctic Convergence, the boundary between warm water masses from subtropical regions and those from the icy cold Southern Ocean. Just before crossing this distinct frontier Enrique Isla our Mexican oceanographer and head of the Spanish working group as well as Christian Bock from the AWI deployed two drifter buoys for colleagues from Paris University. The buoys will, via satellite, regularly transmit their position and various physical measurements to their home institution in France. This data will help to better understand the carbon dioxide budget of the oceans and the atmosphere. The sudden change to beautiful weather was reflected in the faces of all participants, especially those new to Antarctic waters. We left the storm and the rough seas of recent days behind. Unimpressed, Captain Pahl commented, “This is quite normal for the open sea”. Now we can continue to set up laboratories and sampling equipment with the energetic support from the crew.

Each working group gets the opportunity to portray their proposed scientific project by means of short presentations. I would like to briefly introduce the two main projects of this expedition during this and one of the following weekly reports. Our activities east of the Antarctic Peninsula will contribute to the “Census of Antarctic Marine Life” program. The aim is to investigate ecological processes in an area, which has been mostly inaccessible in the past. Research objectives span from bacteria to whales and implement ecological parameters of the surrounding environment. Due to the mountain chain as the main topographical feature and prevailing westerly winds global atmospheric warming is particularly evident around the Antarctic Peninsula. Consequently, during the last 15 years the floating ice shelves, Larsen A and B, which were connected to ice masses inland collapsed and drifted away. Biologists have long been puzzled over the question of what kinds of organisms actually exist under the ice shelf and how such a unique ecosystem functions. Ice shelves cover at least one third of the Antarctic shelf. Fortunately, losses due to climate change sum up to only one percent. Recent reports of a community living beneath the opaque ice shelf describe it as independent of the sun’s energy. Instead it derives its energy chemosynthetically by means of gases seeping from the sea floor. The question remains whether such reports can be confirmed by our findings on this expedition. What is the impact of the calving of hundreds of icebergs over a short period on the fauna living on the seabed? What does the future hold for the biodiversity under these new conditions of open water?

These are some of the questions we are trying to answer during this expedition. We are confident that during the following weeks we will obtain extensive data that will play a major part in solving these questions. Due

to good sea ice conditions we are heading towards Neumayer station with virtually nothing in our path.

We all hope that we will continue to proceed unimpeded and send our regards home.

Yours Julian Gutt