

Weekly report no. 3 (ANT XXI/2) RV "Polarstern" 01.12. - 07.12.2003

A busy week is lying behind us. After a successful and fast run through the pack-ice belt "Polarstern" was going to be unloaded on Monday and Tuesday at Atka Iceport. A further three igloos (melon huts) for the marine mammal group were to be loaded as well as other cargo before leaving by the fastest way through the coastal polynia to the Drescher Inlet. One day was allowed for the transport and set up of the camp there before the ship was going to change from a supply to a research vessel and the real scientific work should start.

Looking back and in view of the desert of pack ice surrounding us today it seems like a miracle that this plan worked. At Neumayer gorgeous weather helped us to get the enormous cargo load from the bow holds onto the ice shelf, to fill the fuel containers and in exchange to take cargo on board. This process, during which crew, logistics' personnel, overwinterers and helpers from the scientist side have to work together, is not unproblematic because the vessel needs to be on stand by next to the shelf ice edge for the whole time. Taking the jolly mood of the participants into account, you got the impression that they enjoyed the work in this fairy-tale landscape. The break-up of the sea ice was here already well advanced: while we were working, more and more broken up floes of the fast ice drifted by. Also unloaded was the green library container of Mr. Fritsch that now can start its role to be an oasis of relaxation on the ice. Further, marginal but important events at Neumayer have been the shuttle to the station for newcomers, the visit to the Emperor penguin colony by the photographers - adding digital photos to the public server -, the memorable football game scientists versus crew (FC Polarstern) that the former unluckily lost 2:4, and the farewell mulled wine party with the overwinterers on the shelf ice.

Being much lighter than before we set a southwest course towards the Drescher Inlet, Wednesday night. A wide polynia gave us a hand, a grey area of open water that reached up to the horizon. The meteorologists studying satellite images before had noticed its existence but its size surprised us all. Sea ice covered only a narrow fringe next to the shelf ice edge and was accumulated in the iceberg parks that we had to sidestep, but did not bother us in any way. We limited the work on the way to the deployment of Dieter's mooring in the intended experimental site where we want to trawl next week. On Thursday night the wind died totally away, the midnight sun was mirrored on this swan's lake and all seemed to be perfect for action at the Drescher Inlet from 4.00 a.m. onwards.

But how fast can the weather change down here! When we arrived at 3.30 a.m. the shelf ice edge and broken up sea ice at the mouth of the inlet were barely visible - very thick fog. No chance even to think to start with relief because the helicopters could not see their target site. In the fog behind us a giant iceberg drifted closer towards the mouth of the inlet with a speed of 0.7 knots; the officer on duty was watching it closely (by radar). And we waited

After a while we started with “small water games” (CTD, giant water bottle) from the stationary vessel to make use of the time. At last at 11.30 a.m. the fog had lifted and the pilots transported the igloos to the shelf ice, where the camp was to be set up. There is a sloping ramp at this site leading to the fast-ice of the inlet on which the ecologic and acoustic research on marine mammals will take place. With slowly increasing winds but still in good weather the remaining expedition cargo was flown over and the camp was set up with the help of colleagues. Everybody else was busy studying Emperor penguins that walked in small groups of 5-10 animals from their colony in the inner inlet towards the sea-ice edge to fish for food for themselves and their chicks. Most of the time they were sledging on their bellies but short distances they also walked upright in a line one after the other. At times a group of 30 animals paddled full of joy in the surface water stirred by the vessel’s propeller; this might have washed out krill and small fish from underneath the sea ice. When the vessel pulled out of the ice at 15.00 p.m. penguins standing upright on the ice-edge watched carefully the turning manoeuvre. Not until the surface waters were boiling by the propeller movements some of them changed to sledging position and departed while the others stayed on being brave. The giant iceberg had moved into the entrance of the inlet but left enough room for our exit. Steffen Spielke measured it to be 1.3 nautical miles in length and 41 m in height above water – a respectful chunk, whose breathtaking line of long, icy cliffs sparkled in the afternoon’s light for a short moment while we were passing it. Views like that made even convinced iceberg despisers to use their cameras again, just as did those 4 cyclopic icebergs on the next day that must have hit each other at high speed; an apocalyptic scene with crumble, deep blue gorges and fields of rubble.

In the polynia we turned towards northeast. Until Friday the wind constantly increased to 7-8 Bft, as announced by our meteorologists, but it did not bother us after the Drescher camp had been set up. There indeed they were confined to their melon huts due to strong 8-9 Bft and hoped for an end to the snowdrift. Straight ahead the ice fields became denser, the floes thicker and the pressure ridges more common. The direct way to the “Lol-lipop”-station (named after the appearance of the sponge *Stylocorda*) was blocked by an ice barrier that we had to circumnavigate; but then we realised that the station we had worked at just 4 years ago is now covered by the extending shelf ice edge, 1.7 km deep. A deep split indicated a future break-up. The next station on the “Hilltop” – at 9 Bft, with snow drift and rough seas, whose white horses were blown away by the storm – the typical fauna of a fresh iceberg scour came alight: sponge spicule mats, fragile bryozoans, and other pioneers as well as many mobile crustaceans, sea spiders and small fish. If this fauna just would always be this obvious, when we search for it!

In the meantime the other side of Antarctic summer has caught up with us – at last. More and more sea ice is blown into the polynia because the wind picked up again after a short pause on Saturday evening. It has snowed

again and sometimes we struggle to move ahead. The pre-chosen area for the disturbance experiment in the benthal, our main objective on this expedition, turned out to be useless after being checked with the photo-sledge, as did the alternative site. The first zooplankton hauls show that many of the copepods are still in their winter rest close to the seafloor. In general, life in the water column is scarce which might explain the lack of marine mammals in the polynia. The ice algae are around which will initiate the phytoplankton blooms but at the moment the water column does not show any stratification. We have decided to finish the Spanish CTD transect before checking further areas on their usefulness as experimental sites.

From snowy Antarctica with a pre-Christmas mood greetings are sent to everybody at home,

Wolf Arntz