

After departing from Bouvet Island we steamed with a good speed towards Neumayer Station on the Antarctic Ekstrøm Iceshelf without stopping to make further measurements. The deployment of a long-term monitoring system on the sea-floor, for which a day's ship-time was planned, was postponed and instead, with the agreement of the over-wintering team in Neumayer and colleagues of the AWI Logistics Department, the supplying of the station was brought forward by a day. This rearrangement was made because of a forecast deterioration in the weather for the original unloading day.

On the way from Bouvet Island to Neumayer Station the Continuous Plankton Recorder (CPR) was towed until the edge of the sea ice at 58°S and from there on the hydrophone streamer for recording whale noises. A start was made on the evaluation of the deep-sea plankton net catches, so far as this is possible on board. The physical oceanographers were busy with preparing and testing equipment which will later be deployed for long-term measurements in the ocean. The aquarium experiments with the creatures caught off Bouvet Island naturally continued as well. In addition to the experiments with fish described last week organisms which live on the bottom by filtering organic particles were investigated. These include for example sponges and gorgonians. These experiments should determine what influence these organisms have on the surrounding water and in particular their role in the remineralisation of nutrients and in the microbial food web.

From Bouvet Island rather than taking the direct route south-southwest to Neumayer we steamed more-or-less due south as the satellite images showed an area there with less ice cover. Lower ice concentrations in the middle of the enormous sea-ice area, which still almost completely encircles the continent at this time of year, are often observed here. The cause of this is probably to be sought in the upwelling of warmer Deep Water which comes here from the north. I will go into this in more detail in a later report when hopefully our own new data can contribute to resolving this phenomenon. Near to the continent we reached the coastal polynya, a narrow strip of open water which occurs along the coast when there is an offshore wind. Here we turned west to reach Neumayer Station. That this route was indeed advantageous could be seen in our virtually unhindered progress. Only once did Polarstern have to draw back in order to ram through a massive pressure ridge. The relatively loose drifting ice fields along the route however almost completely dampened the wind-sea and the long-distance swell running into the area. After the rolling and pitching to which we were subjected the previous week in the open circumpolar ocean we found the gentle movement, only occasionally accompanied by shaking due to the contact with the sea ice, a great relief; the eye was also offered a greater variety of scenery.

The geophysicists took the opportunity of our passage within helicopter range of the South African Antarctic Station Sanae to fly there to use a reference station for gravity measurements. After calibrating their

gravimeter they landed a few hours later safely back on the helicopter deck of Polarstern. For their planned gravity measurements on the Antarctic Continent they now have a freshly calibrated instrument available.

Shortly before reaching the edge of the iceshelf two fish traps were de---ployed for the duration of the unloading. At 8 o'clock on 2nd December we arrived then at the so-called northeast landing of the 15 km inland positioned Station. The berthing position which we chose first, however, turned out to be unsuitable due to a long crevasse; there was the danger that a section of the iceshelf would break away if heavy loads were placed upon it. Only a few ship's lengths away there was a very good berth, a more-or-less smooth 10 metre high cleanly broken edge of the iceshelf without overhangs or cracks. At this position the onshore breeze was also favourable as the ship was pressed against the edge and so held in a stable position.

Already as we steamed towards the northeast landing we could recognise Pisten-Bullys, container-tanks, container sledges and other vehicles on the iceshelf which would be needed to transport away the unloaded freight. They had been assembled there during the preceding days by the over-wintering parties and AWI logistics personnel who had already arrived at the Station. While we were still docking we could see several snow-scooters with people from the Station coming towards us, so we were able to begin with unloading already at 10 o'clock.

While the unloading was going on all the Polarstern travellers had the opportunity in their free time to visit the Neumayer Station where they received a very friendly reception. Most used the opportunity of a heli---copter flight for the visit. The Polarstern's helicopters with pilots and engineers were made available to the members of the new over-wintering party for reconnaissance purposes around the area paying particular attention to crevasses and other dangers. In the evening the old and new over-wintering parties were invited to a small reception in the Blue Saloon aboard the Polarstern. The weather was kind to us during our stay near Neumayer. Apart from a few clouds we were able to enjoy almost unbroken sunshine, even around midnight as it is summer and we are poleward of the Antarctic Circle.

The unloading went smoothly. In total 30 containers, 200 000 litres of fuel, two tracked vehicles and much other equipment was unloaded. 10 con---tainers were repositioned on board by temporarily unloading them onto the ice and one container of returned freight from the Station was loaded.

Despite the volume of cargo transferred the unloading was completed by 2 o'clock the following afternoon thanks to careful preparation by the AWI Logistics Department and the ship's command, the hard work of the crew, over-wintering parties, the logistics personnel and not least the support of 20 volunteers from the scientists who helped with the filling of the container-tanks. Next all from the Polarstern went onto the ice to enjoy a

hot punch together with the people from Neumayer to celebrate the ship's departure. Those of us from the Polarstern also took leave of seven pleasant colleagues who had travelled with us from Cape Town including the acoustics group who had deployed the hydrophone streamer on the way down and who now planned to continue their work by recording the sounds of whales and seals from the iceshelf. Accompanied by continuous waving, the Polarstern set sail at 4 o'clock in the afternoon from the iceshelf.

Shortly after departure the two fish traps, which had been deployed on the way in, were recovered. These were followed by three Agassiz benthic trawls. The creatures caught here are to be used in comparative studies with those collected in similar catches by Bouvet Island.

After completing this work blizzard conditions set in and the visibility deteriorated markedly. Now the sea-ice showed itself from its nastier side. Due to poor visibility, which also prevented helicopter reconnaissance flights, it was difficult to find the leads and free areas between the ice floes and Polarstern could only make slow and bumpy progress forward. However, during Sunday afternoon we reached our new position and began, now again under sunny skies, with the preparatory work for the deployment of our Italian colleagues' long-term monitoring system on the sea floor.

Sport report: The Friday football match Neumayer-Polarstern Sports Club versus Scientists United, which kicked off at 20:15 in the ill-famed Frost Fairy Stadium of the Ekstrøm Iceshelf, in the presence of many enthusiastic supporters and encouraged by the "Siamese Triplets" Cheerleaders, but directed by a biased referee, ended with a wholly unjustified 6 or 8 to 2.

All are happy and well and send with me their Best Wishes,
Volker Strass