

ANT XXIII/3 Weekly Report No. 2
January 29, 2006 (Punta Arenas - Punta Arenas)

We are enjoying an astonishing nice weather since the beginning of the cruise. At odds with any statistics. Each evening at the briefing meeting our meteorologist starts the show explaining how the same narrow high-pressure tongue follows us and protects us from naughty winds.

This nice weather together with the crew dedication and efficiency and the ship performances lead us to finish the section across the Drake Passage on the 26th of January. The last mooring was deployed on January 25th. Like the other moorings it got swiftly and calmly installed and precisely located although not equipped with the Posidonia system. The last two moorings (M9 and M10) are a cooperation between Korea and France. M9 will be recovered from Polarstern in two years from now like the other moorings M1 through M8, whereas M10 which carries sediment traps and current meters will be recovered and redeployed next year from a Russian vessel.

Sediment traps are funnel shaped collectors which concentrate and eventually preserve sinking material in sampling cups which rotate under the funnel. A microcomputer assures that this rotation is precisely timed. Sinking material collected by sediment traps includes sinking dead phytoplankton or zooplankton fecal pellets, aggregates of particles... Thus providing an indication on the surface biological activity.

The last hydrographic station of the section ended at 10 am on the 26th of January. TS diagrams, sections of the various raw parameters were readily plotted. We have a nice spatial resolution within the frontal regions, we captured an energetic cold eddy between the subantarctic and polar fronts. First comparisons between the horizontal velocities measured with the Lowered ADCP (lowered with the CTD) and the ship borne ADCP are promising.

The Drake cruise is also an opportunity to test the ability of kinematic GPS to measure sea level and sea state over a distance of a few hundred km (order 800 km) with a few centimetres accuracy. The GPS receivers on board RV Polarstern are used for doing the sea level survey. A small surface buoy equipped with a GPS is used to calibrate precisely the Polarstern GPS with respect to the sea surface. The small buoy is deployed at each CTD station during the day (sun rises at about 3:30 and turns down at 23:00) if weather permits (and weather has not been a constraint so far). It remains attached to the ship. There have been about 15 GPS buoy measurements so far.

GEOTRACES people are measuring trace elements and isotopes. The distribution of isotopes should give information on the origin and pathways of water masses and on the export of particles out of the euphotic zone. These trace elements, as their name suggest, have very low concentration in seawater. Large amounts of water have to be processed in order to detect them. Therefore a few pumping stations and specific large volume CTD casts are carried out for the GEOTRACES group.

Thus by January 26 in the morning we had deployed 10 moorings, carried out 51 hydrological stations, with 15 GPS buoy stations and 6 specific GEO---TRACES casts or pumping stations.

We also have fish scientists on board who are studying thermal adaptation strategies. During the cruise they aim at collecting living fish for the continuous work at AWI. Their fishing ground is near King George Island. Four fish traps got deployed as planned near King George Island on January 27 with two traps deployed into grandiose Admiralty Bay. The traps have to stay in place for at least 24 hours.

An excellent combination between science and logistics offered us a timely and most welcome break after the frenetic efficient section.

The airport near the Chilean station Bernardo O'Higgins on the Antarctic Peninsula being closed because of cracks in the glacier, Polarstern had to pick up 3 scientists from DLR, who landed on King George Island airport and waited for us at the Jubany station, and take them to O'Higgins. These scientists will operate the satellite/radar station in O'Higgins until March when they close it up and come back.

The Argentinean Jubany station on King George Island and the Chilean O'Higgins station on the Antarctic Peninsula just across Bransfield Strait both house a German laboratory.

Thus we all got the opportunity to land at each base and enjoy indescribable breathtaking Antarctic wildlife and scenery. Our Korean colleagues were delighted to visit their country base the King Sejong Station next to Jubany. We enjoyed the warm hospitality of the Argentinean and Chilean people of the bases.

We took advantage of the night crossing between the Antarctic Peninsula and King George Island to perform a section of 7 CTD/LADCP/rosette stations across Bransfield Strait.

We picked up some living Antarctic fish caught by the Jubany station colleagues and recovered the fish traps with a satisfying amount of eelpouts. An octopus got caught.

A joyful BBQ party cheered us up as we left Antarctica with a pinch of sadness.

Food has been a constant subject of profound satisfaction: varied, plentiful, at times surprising and always delightful. The Sunday morning weight-watcher's meeting revealed no major increase or decrease indicating that although served and appreciated in generous portions, food is very healthy.

Bread on board is magnificent: all sorts of different fresh breads are offered every day. Back home baguette will be boring.

We are very grateful to Matthias, our inventive and attentive cook. The soles after the visit to Jubany, the wonderful birthday cake, the BBQ party will last, imprinted in our memory....

The whole crew is full of delicate attention for us. The captain in par--

tic-ular is exquisite, so attentive, generous and calm under any circumstances making this cruise a unique unforgettable experience.

After the two day logistic break we have reorganised to include the mooring people in the hydrographic work and we are now starting a new high-resolution intense section. Weather forecast is as favourable as it has been so far. The nice high-pressure ridge plans to stay in our company. Scientists and crew send their best wishes to everybody at home. All the best until next weekend.

Christine Provost