

# R/V Meteor

NM174 "N-Amazon"

Las Palmas – Emden, 12.04.2021 – 30.05.2021



## 6. Weekly Report

10. - 16. May 2021

Already the last working week in the area has come to an end. We are all tired and exhausted, but very satisfied. Scanfish, microstructure, 48 hours station with drifter, Goflo, many CTD hauls - all were used once again in the grand finale of capturing the physics and concurrent changes in the plankton communities in the Amazon River plume and the tropical Atlantic. The final station was at 15 degrees north, over 900 miles from the mouth of the Para River where we started. Nevertheless, the very last station still shows traces of river water in the upper 25 meters at a salinity of 34.5 psu.

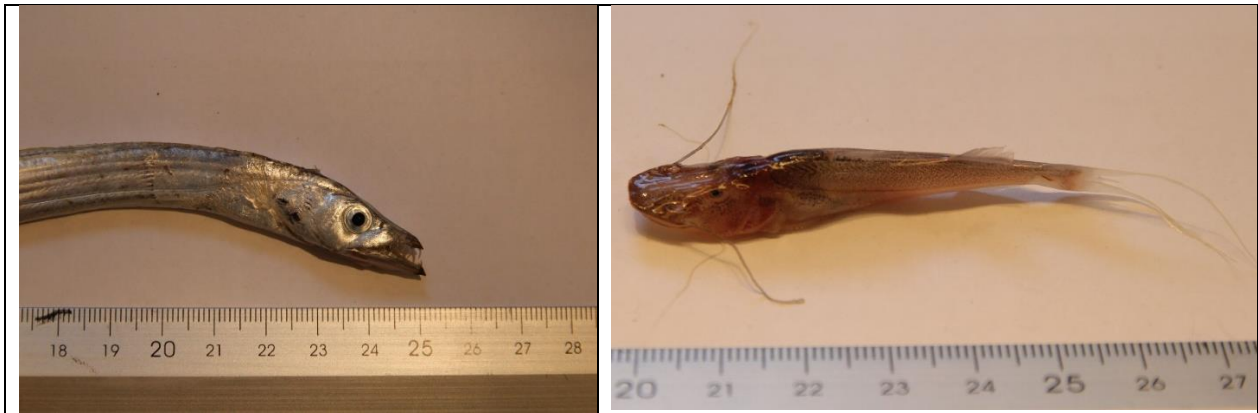
The food web team has been collecting samples in the different habitats all the time in order to obtain the samples that will make the functional diversity transparent. Behind the term hides the analysis of food sources and food relationships within the plankton community. Unknown to us was which plankton hides in the brown waters of the Amazon estuary, where no light can penetrate deeper than a few centimeters into the water column. What may await us when we lifted our multinet net out of the murky "broth" which is only a few meters deep? We could expect either empty nets, because nothing can thrive without light, or perhaps lots of jellyfish, which make few demands on the food composition.



The multiply-closing plankton net arrives on deck (left). In the Amazonas estuary masses of peat like organic have been caught in the net (right).

But the fishing boats were already the first indication that it can't be like that. And then the net tow held some surprises, because we didn't catch any jellyfish, but instead peat-like organic matter came to the surface (see photo). This sample, which looked like "peat", was full of shrimp, which also explains the presence of the fishermen. The deck crew was not very surprised by the result, because they knew similar things from other

tropical estuaries. One should perhaps ask the sailors more often about their observations and experiences.



Young predatory fish (left) and a catfish (right) from a net catch near the Amazonas estuary.

We were very surprised when more net catches came to light. Mesozooplankton we wanted to catch, Amazon fish in their mini version we got; predators, catfish, glass eels and species unknown to us. These catches are certainly a result of the heavy turbidity of the water, because the young fish cannot see the approaching net and do not avoid it. So this is what the "brown food web" of the Amazon estuary looks like, which we successfully sampled during our first stations in the plume. Our Brazilian colleagues, who unfortunately cannot be on board, will be surprised when they analyze these catches. More completely different looking catches awaited us further north in more nutrient-poor and clearer waters. Suddenly the old familiar copepods dominated along with rare pelagic polychaetes (worms) and small jellyfish. Shining sardines were also in the nets at night, which we could tell from countless scales and one individual in the catch. So, like everything else, the zooplankton communities change the further we are away the estuary. Up to 100 liters of plume or ocean water was also filtered at each station where the net was pulled to sample the plant food base. We are very excited to see what food web structure and nitrogen sources our total and amino nitrogen specific isotope analyses of these catches back home in the EA-IRMS and GC-C-IRMS labs will reveal. Our IRMS engineers Dirk and Iris who stayed at home are already waiting for us.

Maren Voß  
Chief Scientist  
(Leibniz-Institut für Ostseeforschung Warnemünde)

*Link zum Blog der Reise: <https://www.io-warnemuende.de/fs-meteor-m174-2021.html>*