POS514 – 1.Wochenbericht (27.05. - 02.06.2017)

Hartmut Schulz, Universität Tübingen, und Wissenschaft POS514

After two and a half days of transit from Heraklion, heading to NW along Greece, we reached our first working area in the western Strait of Otranto in 29.05., where we successfully cored a transect of 5 gravity cores up to 5 m long, supplemented by CTD vertical casts, multinets and multicores. The aim of that transect is to reconstruct the water mass exchanges through that ocean passage, which was studied in some 45 years ago by Hesse, von Rad and Fabricius (1971), based on much smaller cores only ~1-m-long, highlighting the complex sedimentology. In the following days we had a first shallow station (470m) on the Albanian slope and used also the "Frahmlot" with full success. These cores will be used to monitor the water masses for the past thousands of years. Adriatic Sea deep water formation is a contributor to the Mediterranean transient intermediate water that ventilates the Eastern Mediterranean in concert with alternative sources from the northern West Mediterranean and the Aegean Sea. The crew of Austrian, Croatian, German, Italian and US scientists very much enjoyed the bright, warm and calm weather after some rain which left soon after we lost sight to Crete.

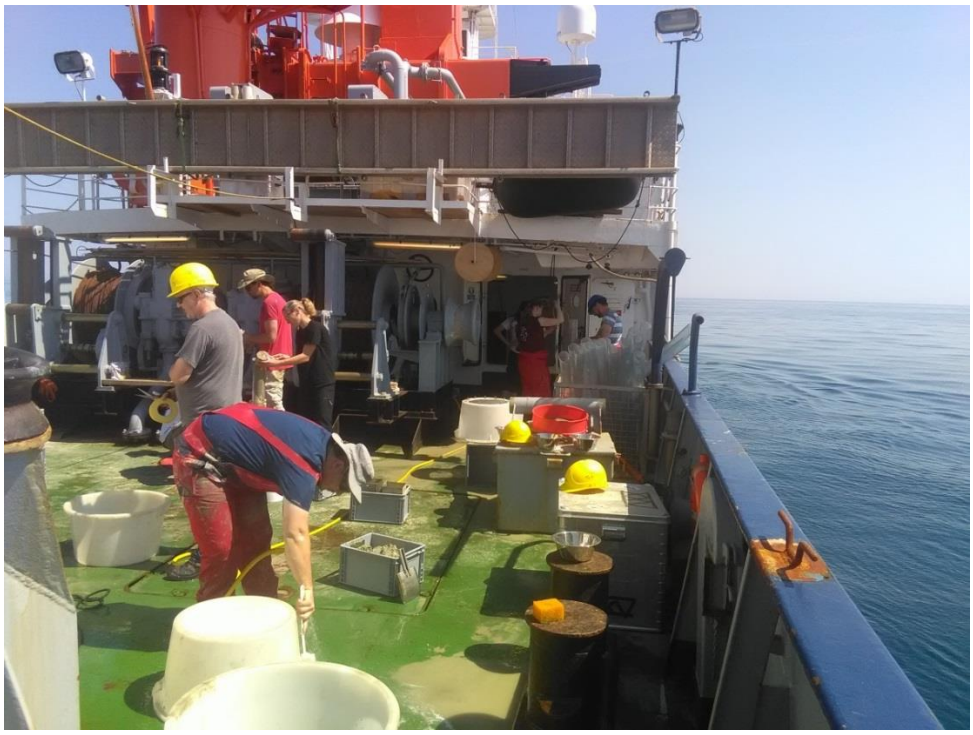

Foto 1. Work on board FS Poseidon, washing (> 1 mm-fraction) and sorting life and dead paleontological samples along the Bari transect (Station POS514-9-13GRAB, 41° 17`N, 017°06`E, 147m water depth), with a number of unexpected mollusk and brachiopod shells. After these stations of up to 18 individual casts, cleaning of deck and labs is obligatory.

As a second scientific cruise objective, described as “Micropaleontology, Actuopaleontology, and Environmental Baseline Study of the Holocene to latest Pleistocene in the northern and eastern Adriatic Sea basin”, our team of biologists, paleontologists/geologists (Foto 1.) and two oceanographers focuses on the present and past states of the Adriatic Sea benthic and planktic fauna, which was (at least in parts) well-studied more the hundred years ago, but needs to be updated. Issues of conservation biology and actuopaleontology, the macroinvertebrate faunas (molluscs, snails, echinoderms, bryozoans, fish remains) can be well compared with the rich documentation in the early studies (frequently as first descriptions of species) from the former and today surrounding countries of the early 19th century AD.

In the dusk of 1st of June we saw the first floc of dolphins passing by FS Poseidon, supporting the view, that these creatures, pictured in the Minoan culture more than 3500 years ago (Foto 2), seem not to be endangered by the ecosystem changes in the Adriatic Sea. However, documentation and identification of species is difficult and time-consuming in the sediments, where taphonomic (preservation of ancient life) factors are poorly known.

Foto 2. Dolphins, fish and sea urchins in pictures in the Archeological Museum of Heraklion from Knossos ~3500 yr BP (http://www.ancient.eu/privacy/). Are these species still present in the northeastern Mediterranean waters?

Sampling results (02.06.2017, 8:45h): 12 CTD, 28 multinet, 8 gravitiy cores, 9 multicores, 13 Frahm cores, 6 box cores, 18 grab cores; 2 series of 4 multicore tubes of benthic foraminiferal incubation experiments.

Hesse, R., von Rad, U., and Fabricius, F.H., 1971. Holocene sedimentation in the Strait of Otranto between the Adriatic and Ionian Seas (Mediterranean).- Marine Geology, 10: 293-355.