



First results of the palaeogeographical research in Limyra and its environs (SW-Turkey)

Friederieke Stock (1), Levent Uncu (2), Martin Seyer (3), and Helmut Brückner (1)

(1) Geographical Institute of the University of Cologne, Albertus Magnus Platz, 50923 Cologne, Germany, (2) Geographical Institute, University Bilecik, Turkey, (3) Austrian Archaeological Institute, Franz Klein-Gasse 1, 1190 Vienna, Austria/
Austrian Academy of Sciences, Vienna, Austria

Geoarchaeological research in and around ancient cities of Asia Minor is an important tool for reconstructing the palaeogeography of their environs. An intensive geoarchaeological research project has started 2015 in the framework of a cooperation between the Austrian Archaeological Institute (ÖAI) and the University of Cologne (Brückner et al., 2016). 21 sediment cores were carried out in the ancient city of Limyra and its environs since 2015 and analysed with a multi-proxy approach (geochemical, sedimentological and microfaunal methods).

The main goals of the project are to reconstruct (i) the environment, especially during the Classical to Late Roman periods; (ii) the geohydrological situation; (iii) the thickness of the settlement layers; (iv) the maximum extension of the former lake; to reveal (vi) the earthquake chronology and (vii) the spatio-temporal shifts in the coastline.

First results show that the middle and eastern part of the city had been built on top of former lake sediments. Peat layers (so-called “floating peats”) are intercalated and represent the starting siltation process. The reactivated lake phases, expressed in the rapid transitions from peat to lake strata, may be explained by earthquakes with co-seismic subsidence. Then follow fluvial sands with a fining-upward sequence (gravel at the base, overlain sands and alluvia). The strata provide information about shifting river channels. Anthropogenic layers form the top part of the core; they partly consolidated a swampy environment (core-filling limestone layers).

In drill cores located between the eastern and the western city, pebbles and edged stones with artifacts follow on top of lake sediments and sands (littoral). The stones seem to have been intentionally deposited; people may have settled at the lake shore. The peat layer on top may represent the changing hydrology and co-seismic subsidence.

The drill cores outside the city area confirm the sediment sequence: on top of limnic follow by a fluvial facies (fining-upward sequence, sands, alluvium). Lim 20, carried out close to the present coast reveals homogenous sands overlying the fluvial ones. The stratigraphy most likely represents the uppermost layers of a beach barrier which is overlain by dunes. Thus, the explanation that the origin of the lake was a lagoon is the most probable one.