

***The environs of Elaia (NW Turkey) - Sea-level fluctuations, vegetation history and microfaunal record***

Martin SEELIGER<sup>1</sup>, Lyudmila S. SHUMILOVSKIKH<sup>2</sup>, Anna PINT<sup>1</sup>, Peter FRENZEL<sup>3</sup>, Stefan FEUSER<sup>4</sup>, Daniel KELTERBAUM<sup>1</sup>, Melanie BARTZ<sup>1</sup>, Dominik BRILL<sup>1</sup>, Helmut BRÜCKNER<sup>1</sup>

<sup>1</sup> Institute of Geography, University of Cologne, Köln, GERMANY

<sup>2</sup> Mediterranean Institute of Marine and Terrestrial Biodiversity and Ecology, Aix-en-Provence, FRANCE

<sup>3</sup> Institute of Earth Sciences, Friedrich Schiller University of Jena, Jena, GERMANY

<sup>4</sup> Heinrich Schliemann-Institute for Ancient Studies, University of Rostock, Rostock, GERMANY

During Hellenistic times, when the Pergamenians established their powerful realm in Asia Minor, they were in need of a harbor which they found in the city of Elaia. Our research aimed at reconstructing the landscape history around this harbor city. The scenarios based on terrestrial and semi-aquatic sediment cores. The maximum marine transgression and thereby the former extension of the embayment was identified. Palynological and microfaunal analyses of a 9 m sediment core, drilled inside the silted-up harbour basin, were carried out to reconstruct the vegetation and environmental history of the surroundings of Elaia. The age-depth model is based on twelve 14C age estimates covering the last 7.5 millennia. The pollen chart clearly reflects the human impact during Classical, Hellenistic, and Roman times. In addition, to standard pollen analysis, non-pollen palynomorphs help to detect environmental changes, such as fire and pasture activity, soil erosion intensity, and even document shipping trade routes by invasive species. Wall structures in the western part of the embayment, lying ca. 0.5-1 m below present sea level. These remains dated back to the Late Roman period (3rd - 4th centuries AD) using absolute dating techniques such as OSL and 14C. Since these structures lack any solid foundation and are only constructed of one aligned layer of stones, they cannot be breakwaters or piers, as mentioned in earlier interpretations. The comparison with similar features from other periods around the Mediterranean led to the conclusion that they are the remains of ancient salt works (cf. Seeliger et al. 2014, *Geoarchaeology* 29: 138-155).

