MULTY-PROXY APPROACH IN THE STUDY OF PALEOENVIRONMENT AND CULTURAL LANDSCAPE OF THE IMPERIAL HARBOUR OF ROME (CENTRAL ITALY)

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The present study aims to reconstruct both the plant cultural landscape and the water environment in the harbour basins applying detailed plant macro- and microremains analyses with other proxies obtained from sediment of cores drilled in the area of Claudius harbour and of Trajan lake. The chronological framing of the records is based on stratigraphical criteria, radiocarbon dates, and historical data.

The two cores from the Claudius harbour area record different periods of time. They show a plant landscape typical of a coastal environment with periods of time. They show a plant landscape typical of a coastal environment with ruderal and edible elements, which indicate the human presence. The older core (PTS13) records a human impact lower than the other. This indicates that the human impact was lower during the first centuries AD than during late-Antiquity and Middle Ages. In archaeological settings as complex as harbour basins multi-disciplinary analyses are a crucial tool to unravel the relations between human impact and natural environmental changes.

We used a multi-proxy approach to characterize and date environment and landscape changes in the ancient port of Rome area, from the 1st century to the present day. The present study aims to reconstruct both the plant cultural landscape and the water environment in the harbour basins applying detailed plant macro- and microremains analyses with other proxies obtained from sediment of cores drilled in the area of Claudius harbour and of Trajan lake. The chronological framing of the records is based on stratigraphical criteria, radiocarbon dates, and historical data.

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a) PTS5 Portus - Canale Trasverso core

b) PTS13 Portus - dock core

Historical sources report that the Imperial harbour of Rome was built along the Tyrrhenian coast, in the Tiber delta, by Roman Emperor Claudius (1st century AD), and modified by Emperor Trajan (2nd century AD) with the addition of a hexagonal basin. It was the principal maritime port from the middle of the first century onward and an important link between Rome and the Mediterranean. Portus, the harbour town, developed together with the port itself. Due to the sea storms and to the Tiber River floods the harbour area was subject to a rapid silting up and for this reason at present time its remains are located in Fiumicino (Rome), 3 km east from the Tyrrhenian shoreline. Only the Trajan basin is still visible and appears as an artificial lake.

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This is the first time that a plant landscape is reconstructed using so many kinds of plant micro- (pollen, algae and microcharcoals) and macroremains (seeds/fruits, wood, and leaves) on the same core. Macroremains turned out once again to be a strong tool to detect human impact in an archaeological setting and this study confirms the need to carry out a 360° study on plant fossils to better reconstruct the past flora and vegetation and to evaluate the degree of the human impact.

These results are enhanced by preliminary pollen data from Trajan basin sediments, granting the possibility to increase the temporal interval under investigation to the last two millennia.