

## Was there a Roman shipwreck at Rio de Moinhos (Esposende, NW Portugal)?

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Archaeological discoveries at the beach of Rio de Moinhos (Esposende), on the low-water swathes, have revealed the presence of several evidences of Roman occupation. Among them we highlight the existence of a high number of amphorae fragments, datable to the Augustan / Tiberian period.

The area where the archaeological remains were found is included in a geomorphological unity characterized by the presence of dark, fine and humic sediments aged from Late Holocene. The facies of these sediments points to a confined wetland - a lagoon or palaeo-estuary environment - that extended north and south of this place, and westwards of the present coastline.

In 2005, intense erosive process removed sand from the beach face, uncovering older deposits. Tree stumps, wooden artefacts and numerous pieces of ceramics were exposed during low tide.

The stumps are of *Alnus glutinosa*, with an age of  $5590 \pm 80$  yrBP. The wooden artefacts are also from the same species and aged of  $4570 \pm 80$  yrBP. The area was soon covered by sand, which did not allow further observations. Though there are not any dating from the lagoon deposit exposed in this place, dating from the same sedimentary unit in neighbouring areas that point a time interval between  $4470 \pm 50$  (peat at 5m depth, Belinho) and  $2320 \pm 90$  yrBP (peat, outcrop, Foz do Neiva) are available.

The palaeo-forest, corresponding to a lower relative sea level, was inundated somewhere about 4400-4500 yr BP, creating a wetland. An interesting point is an indicator of increased marine influence (a “sudden” flooding?) in Cávado palaeo-estuary occurred prior to  $1780 \pm 50$  yrBP when the marsh was already evolving to a supra-tidal position. If this event had happened at Marinhas, too, it would correspond to a sea penetration along the low wetland, increasing its water depth. Could vessels enter at that time in this kind of embayments?

The concentration of the finding, the homogeneity and the highlighted presence of Haltern 70 Baetican amphorae from the Gaudalquivir, leads us to believe that they come from a vessel that transported wine products and its derivatives. One of the fragments, which correspond to a spike with a graffiti of one of these amphorae, still conserves remains of resin and of the transported good. Truly interesting, however, was the finding of two fragments of *dolia* with a similar fabric to that of the Haltern 70 amphorae which seems to indicate that we are dealing with a small and rare ship of the tank type. Apparently these vessels did not last long. All the shipwrecks date from a very limited period, namely from Augustus to Nero (*id. ibidem*).

Even though the data are scarce, we think that there might have existed a small Roman harbor near the place where the fragments were found. This harbor would have then been responsible for the supply of the surrounding region. The appearance of the remains of a Y-shaped vessel in the place where these fragments were collected seems to corroborate this possibility.