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**PhD project: Climatic and environmental changes during the Pleistocene-Holocene transition.
New palynological data obtained from Rías Baixas (NW Iberia)**

Supervisor: Dr. Castor Muñoz Sobrino (University of Vigo)

Summary: Paleoecological studies are essential to understand the response of ecosystems to climate and other environmental changes, and to plan management and conservation strategies. In this study we used organic microfossils (pollen, dinoflagellate cysts, etc.) preserved in the sediments of Ría de Vigo and Ría de Arousa to reconstruct the oscillations occurred in the vegetation, the climate and the hydrology during the last Glacial-Interglacial transition (LGIT; between ~40 000 and 8 000 years ago). Chronologies are supported by isotopic dating. Palynological data were correlated with other sedimentary data: lithology, grain-size distribution, elemental analyses (C, N, Al, Pb, Fe, Ca, etc.) and seismic stratigraphy, following a multi-disciplinary perspective.

New data revealed that the ecosystems of the rias have been sensitive to the main climatic and oceanographic oscillations that affected the NE Atlantic during the MIS-3 and the Lateglacial/Holocene transition, including some of the climatic substages of cooling which have been previously described in the isotopic records from the Greenland ice-cores. Such variations have modified the marine productivity, the littoral configuration, the sedimentary patterns and the coastal vegetation dynamics of the rias. Furthermore, palynological data from shallow marine environments support the existence of glacial refugia for mesophilous vegetation in NW Iberia, particularly in the littoral area of Galicia; they reveal that *Carpinus betulus* (hornbeam) was an important component of the regional forests of the Ría de Vigo and that it persisted in the region until at least ~8 000 years ago.

This thesis also include two additional studies on the palynomorph distribution in modern sedimentary environments and in a Late Holocene sequence. These studies provided data which may be used as reference to interpret stratigraphic sequences more precisely. The first study focus on the comparison of modern palynological fingerprints from coastal habitats with different environmental conditions. We also performed high resolution palynological analyses in the upper levels of one of the sediment cores obtained from the Ría de Vigo. This record allowed studying climatic and anthropogenic impacts on the Ría de Vigo ecosystems (marine productivity and vegetation) during the last two centuries.

