Vegetation dynamics, landscape and climate change in northern Iberia during the Mesolithic: archaeobotanical data from the shell midden of El Mazo (Asturias, Spain).

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Abstract

El Mazo rock-shelter (Asturias, Northern Spain) contains a Mesolithic shell midden with a high chronological resolution, which offers great possibilities as an empirical scenario to develop palaeoenvironmental investigation. This study aims to approach vegetation dynamics and the exploitation of plant resources during the Mesolithic in the Cantabrian region and to assess the existence of the 8.2 ka cal BP abrupt climate change on this period. The results presented here are the outcome of archaeobotanical interdisciplinary studies where micro-remains (pollen, spores and non-pollen palynomorphs) and macro-remains (woody and non-woody charred plant remains) analyses have been combined with archaeological knowledge.

The main results show the predominance of deciduous forests at the beginning of the sequence, with oak, birch and hazel as the main species. The almost exclusive use of oak wood and hazelnuts is a clear reflection of the surrounding forest. The units dated around the 8.2 ka cal BP event show how vegetation was affected by this abrupt climate change, showing a clear decline in arboreal pollen due to new drier and colder climate conditions. On the contrary, there is an increase of herbs and other elements that would indicate degradation processes in oak forests. Regarding forest resources, there are not significant changes, as oak wood is still the most used. However, hazel increased its values in this period. After the occurrence of the 8.2 ka cal BP event, most of the mesophylous forest taxa and their characteristic floristic courtship recover to their initial values. Once the period of destabilization caused by the aforementioned abrupt climate change had passed, the forest recovers its initial state of equilibrium, once again dominating the deciduous woodlands.

Keywords: Archaeobotany, climate change, 8.2ka event, Mesolithic, N Iberia.

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