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Socio-ecology of Early and Middle Bronze Age communities in the northwest Atlantic region of Iberia: Wood resources procurement and forest management

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ABSTRACT

This paper focuses on the web of relationships established between Early and Middle Bronze Age communities and their environment in Northwest Iberia. Charcoal remains recovered from settlements and funerary sites in this area can inform a greater understanding of wood resource procurement and woodland management strategies adopted by these small-scale communities. Although charcoal analysis of contexts with chronologies ranging from 2200 to 1200 cal. BC is not commonly undertaken in this area, data from this period are of great importance because it represents a phase of major deforestation and landscape change. Wood resources were local and exploitation was conditioned by their availability in the environs of the sites. These communities established a clear preference for *Quercus* wood, combined recurrently with shrubby species of the Fabaceae family. This co-occurrence, previously observed in Middle and Late Bronze Age contexts, could extend back to the Early Bronze Age and even to the Late Neolithic. The presence of small trees and shrubs such as Rosaceae/Maloideae and *Corylus avellana* could be related with the open landscape that characterises this period, and with the existence of woodland management practices designed to prevent forest regeneration.

1. Introduction

Wood resource procurement during the Early and Middle Bronze Age was determined both by resource availability and human choice (Piqué, 2006). Regarding environmental setting, climate and soil are usually considered to be the most relevant drivers of plant distribution (Costa et al., 1998). However, even though anthropogenic climate change is a recent trend, the human capacity to change soil conditions, and even local geomorphological characteristics, had already begun in prehistoric times, as studies in Northwest Iberia have demonstrated (Ramil-Rego, 1993; Martínez-Cortizas et al., 1993, 2009).

Since at least the beginning of agriculture and pastoralism, human–environment relationships have influenced plant distribution, especially the composition and size of specific plant formations (Ramil-Rego et al., 1998; Muñoz-Sobrino et al., 2005; Martínez-Cortizas et al., 2009; López-Merino et al., 2012). In this sense, human communities and landscapes have co-evolved since early times and anthropic activities have affected resource availability. To observe this transformation we must forget our notion of objectified nature (Brück, 2000), because the relationship established in the past between people, forest and resources was probably animistic, as demonstrated by anthropological research, and perceived as a set of metaphorical links, without distinctions

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between self and other, objects and subjects, or human and animal (Descola, 2001, 2002; Pálsson, 2001; Viveiros de Castro, 2004). Interactions and interdependencies between plant resources and people were established, creating a complex entanglement (Hodder, 2011; Van der Veen, 2014).

Palynological studies in Northwest Iberia have enabled an assessment of landscape reconstruction throughout the Holocene (Ramil-Rego et al., 1998; Santos et al., 2000; Muñoz-Sobrino et al., 2001, 2004, 2007; Mighall et al., 2006; López-Merino et al., 2010, 2012). In the early part of this period, deciduous oak forests with deciduous *Quercus*, *Corylus avellana*, *Alnus*, *Ulmus* and even *Castanea* became slowly established in the region, to the detriment of mixed forests of *Pinus* and *Betula*. Nevertheless, intra-regional differences occur, reflecting the geomorphological and bioclimatic diversity of Northwest Iberia. As such, the establishment of deciduous oak and the retreat of *Pinus* and *Betula* occurred differently within the region, particularly in the interior areas where *C. avellana* is scarcer.

Despite some climatic fluctuations throughout the Holocene, particularly from the 5th millennium cal. BC onwards (i.e. the Neolithic period), human pressure seems to have been the major driver of landscape change (Ramil-Rego et al., 1998; Santos et al., 2000; Muñoz-Sobrino et al., 2001, 2004, 2007; Mighall et al., 2006; López-Merino et al., 2010, 2012). These fluctuations continued throughout the 4th and 3rd millennia cal. BC, until the beginning of the Bronze Age. Although climatic fluctuations as well as intra-regional differences occurred during this time-span, there was also a tendency for a decrease in arboreal pollen, which

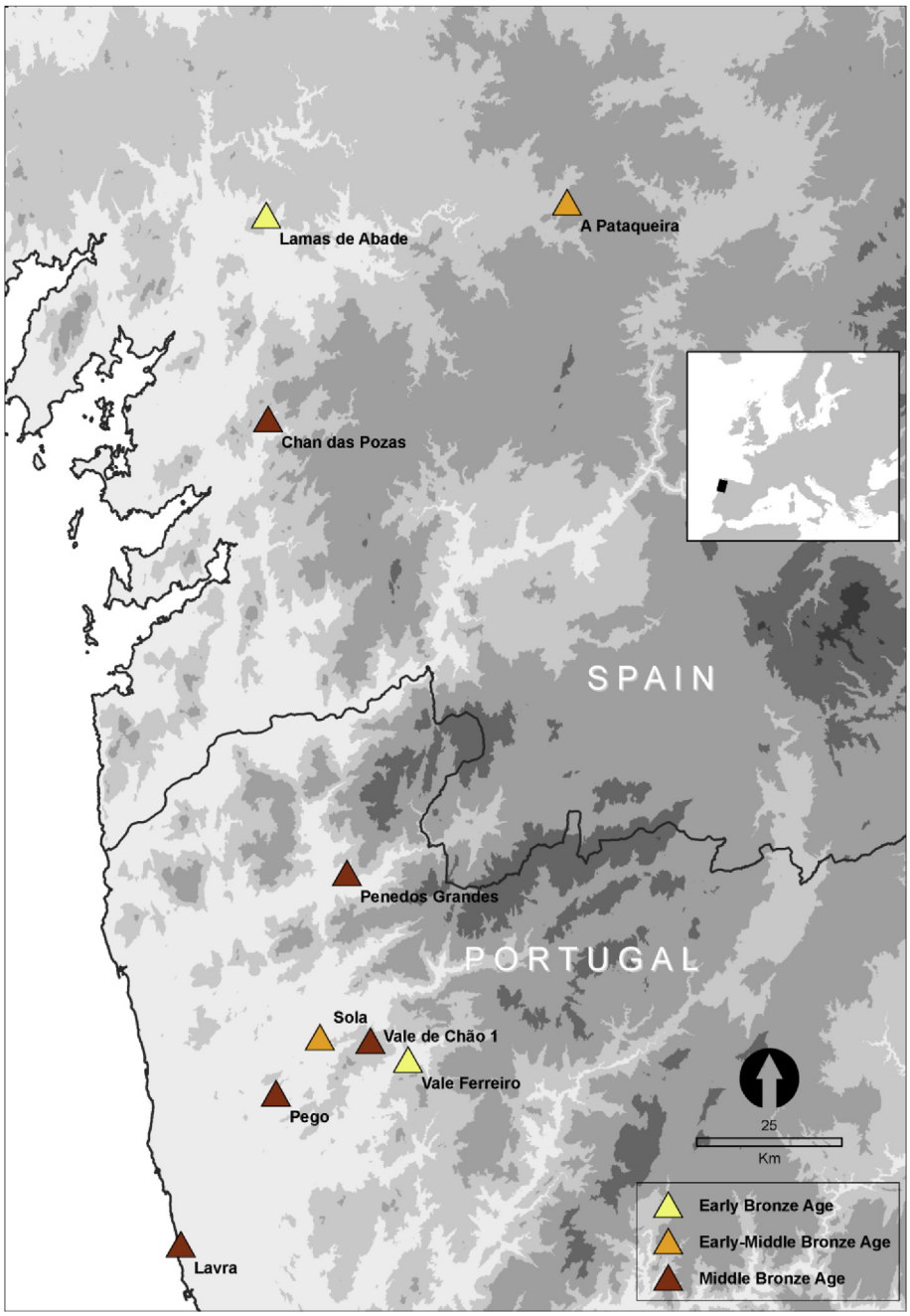

Fig. 1. Distribution of the North-west Atlantic sites occupied during the Early and Middle Bronze Age for which anthracological data were obtained.

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