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## La Peña de Estebanvela

La Peña de Estebanvela is a rock shelter (1,065 metres above sea level) excavated in the Miocene conglomerates. It opens up to the south east along the right bank of the river Aguijejo, a tributary of the Riaza. It nestles in the south east sector of the Duero basin, in a mountainous landscape delimited to the south by the foothills of the Sistema Central (Sierra de Ayllón) and to the northeast by the southern edge of the Sistema Ibérico. To the west it meets the plains of Aranda de Duero and to the east, the Almazán basin, which connects to the Ebro through the Jalón valley, giving it a privileged strategic position.

It was discovered in 1992 during surveying work led by Fernando López Ambite to draw up an archaeological map of the area. The Rock Shelter was clogged with sediment and discovered thanks to the materials found in a ravine that had washed away part of the cavity filling.

Between 1999, when work started, and 2009 ten excavation campaigns were carried out under two research projects funded by the Castilla y León regional government, and since 2004, with the collaboration of the CSIC.

Peña de Estebanvela is currently the main research reference for the Magdalenian in the Meseta. Its stratigraphic sequence has undergone extensive chronostratigraphic control. The radiocarbon dating values obtained, the widest for the geographical range analysed, have allowed the definition of the chronological framework of the late Upper Pleistocene in this area to progress.

### 1. Stratigraphy and dating values

Six levels, from wall to ceiling, have been identified and are chronoculturally attributable to the Middle Magdalenian (VI and V), Upper Magdalenian (IV and III) and the late Magdalenian (II and I) (Cacho *et al.*, 2007: 53-64). The sedimentology

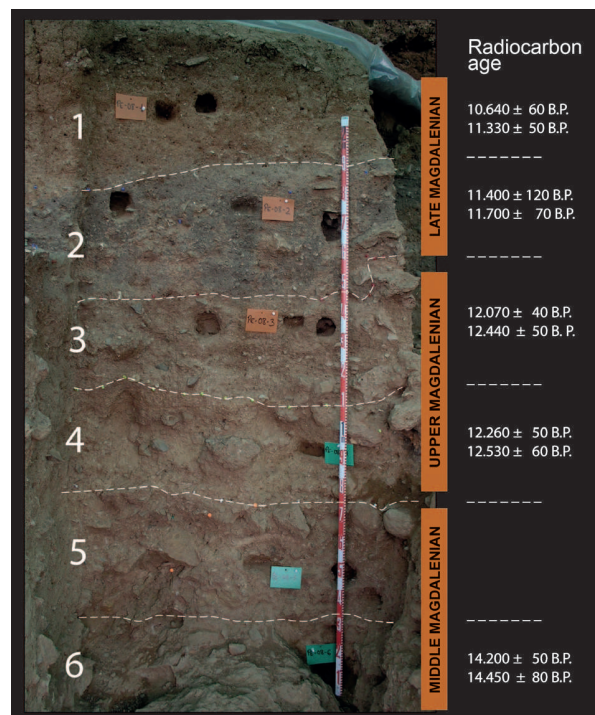


Figure 1. Stratigraphy and radio carbon dating values of La Peña de Estebanvela.

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conditions and the radiocarbon dating values put the stratigraphic sequence at the end of the Upper Pleistocene.

The series starts with sedimentation of level VI (17,770–17,190 cal BP), at the start of GS 2a, of cold conditions before a slight warming that comes before Heinrich event 1 (H1). Then a time lapse of around 2,000 years is detected, which corresponds to GS 2a before H1, of cold conditions but evolving towards warm conditions, for which we do not have radiocarbon dating values, although level V, in apparent continuity with level VI and which has not been dated, must fall within this time period. Levels IV and III, with seven valid dating values and whose cumulative probability curves for the calibrated ages overlap almost entirely, are placed within the interval between 15,150 and 13,890 cal BP. Therefore, these levels must have been deposited between the last cold period of GS 2a (Older Dryas), the first half of the warm period GI 1e (Bölling) and the cold period GI 1d (Older Dryas). However, given the characteristics of the sediment and the geographic and topographic location of the site, we favour sedimentation for both levels during GI 1e of warm conditions. The sequence continues with level II, whose dating values calibrated with a high probability put it in the range of 13,720–13,100 cal BP, during the warm period GI 1c (Alleröd). Above this level, the development period of level I falls between 13,300 and 12,610 cal BP, from the cold oscillation of GI 1b (Alleröd) to the start of GS 1 (Younger Dryas) of cold conditions.

Finally, following sedimentation of level I, post-depositional processes of cold conditions take place, which are responsible for the cryoturbation that affects levels I and II; these processes occurred during GS 1 (Younger Dryas) (Jordá Pardo and Cacho 2013: 75-92).

## 2. Paleoenvironment framework

The information available, basically deduced from the association of micro-mammals, is irregular throughout the sequence, due to the fact that the largest volume and surface area of the sediment excavated is concentrated in the top section. In fact, level I is the only level that has a large enough record to make paleoenvironmental interpretations. It stands out for its diversity in terms of micro-mammals, 15 of the 16 taxa identified at the site (one erinaceidae, three sori-

comorpha, four chipotera, seven rodents and one lagomorpha), and for containing the highest minimum number of individuals. From this assemblage it may be inferred that the climate would have been warm and wet, like today's. The association also suggests various types of environment: woodland edges, scrublands with wet grasslands and scrublands with dry grasslands. The landscape would not be very different (although perhaps with more plant coverage) from the one that exists around the site today, where the river Aguiense, framed by riverside woodlands, would facilitate the different environments.

There is no species at the site that indicates a harsher climate than today's. Rather, there are elements with a clear thermophile character, such as *Apodemus sylvaticus* and *Eliomys quercinus* which are relatively abundant in the assemblage of level I and some taxa that have a clear preference for the Mediterranean climate, such as *Crociodura russula*, *Microtus duodecimcostatus* and *Oryctolagus cuniculus*, which is the most abundant mammal in level I (Sesé 2013: 17-23; Laplana *et al.*, 2011). *Microtus oeconomus* is the only Euro-Siberian element found so far, although it only indicates cold weather conditions when it is very abundant (Sesé 2005: 190). This is not the case of La Peña de Estebanvela where, although present in almost all of the levels in the sequence (levels I, III, IV and V), the number of individuals is always small; one in the first three levels and two in the last.

## 3. Exploitation of the territory and seasonality

From the zooarchaeology and taxonomic analyses it may be deduced that the Magdalenian groups exploited the different habitats of the immediate surroundings of the site: open environments (*Equus ferus*, *Equus hydruntinus*), woodlands (*Capreolus capreolus*, *Cervus elaphus*, *Lynx pardinus*), rocky (*Capra pyrenaica*) and mountainous (*Rupicapra pyrenaica*).

In the upper levels (I-III), with a larger archaeological record, lagomorphs dominate. The most common species of macro-mammal is the goat, followed by the horse. To a lesser extent, deer, chamois, roe and boar also appear, in addition to some carnivores, such as the lynx. From the taphonomy study it may be concluded that the prey hunted was transported whole to the site, regardless of its size, a capture pattern arising in the surround-

ing area not exceeding 10 kilometres, where they were skinned, the flesh was removed, they were taken apart and consumed in full (Yravedra and Andrés 2013: 230). The scarcity of burned bones suggests that if the meat were cooked it must have been done after the flesh had been removed and that the fat of the axial and epiphysis elements was not used. The lack of thermal alternations in the fauna also indicates that waste removal strategies were not followed.

The ungulate hunting process is selective; prey aged between 4 and 6 years, complemented by some baby and young individuals. This strategy has some advantages, such as higher quality of the meat and a higher probability of success, as young individuals, which are solitary, do not have group protection. Seasonality, established based on the ungulates from levels I to III, indicates two periods for accumulating prey in the annual cycle: spring – early summer and autumn, coinciding with calving periods (higher vulnerability) and mating season (addition of more individuals) and a shelter usage pattern that mirrors this activity throughout the sequence (Arcecedillo 2013: 204).

The charcoal identified indicates the use of wood, mainly willow, as fuel for fires. Its dominant presence reflects an intensive and recurrent use of the riverside. Although they have not been recovered, Magdalenian groups would have access to a large number of edible fruit and nuts (cherry, sloe, hazelnut and apple) that could have been part of their diet (Ruiz-Alonso *et al.*, 2013: 118-119). Use of riverside resources is complemented by fishing, which is demonstrated by the presence of *Salmo trutta* vertebrae (Perea and Doadrio 2013: 136-138). Birds must also have been consumed, although there are no cut marks or direct evidence of human intervention on the bone remains found to date (Sánchez Marco 2013: 153-154). Other charcoal samples from La Peña de Estebanvela could indicate use of certain plant resources for uses not related to diet, such as young willow or hazelnut branches for basket making.

#### 4. Lithic assemblages and bone industry

The operating sequences identified in the lithic assemblages show no significant differences throughout the sequence. Lithic production is aimed at obtaining laminar flake products almost exclusively from flint obtained from the immedi-

ate surroundings (in an arc of about 20 km), although quartzite, quartz and rock crystal are also present.

The core reduction strategies focus on preparing and then manufacturing plano points via parallel or convergent flaking from one or two striking platforms. The result is dome-shaped cores. Flaking is sometimes performed on convex or carinate surfaces, resulting in dome-shaped cores. In addition to these unipolar or two opposing striking platform systems, a third system is detected, which follows a reduction process based on either of these two reduction sequences and finishes by incorporating successive surfaces and platforms. In some cases, this third system is linked to a more opportunistic laminar flake objects and in others, to a desire to maximise the core reduction possibilities.

The most common type of retouched assemblages in levels I and II are blades and short scrapers. In addition, there is also a significant presence of denticulate retouch in the top level. In level III, and even more so in level IV, burins start to gain a certain level of representation but scrapers and above all, single, double or direct fine retouch back-edge blades are still more common. Finally the two lowest levels reflect a change in typology as burins exceed scrapers. This, in addition to the wider variety of raw materials, suggests a technology transformation process, which would have to be evaluated properly when we have a larger record from levels V and VI (Martos *et al.*, 2013: 383-384).

The bone industry is relatively small; it is almost always quite fragmented and has been preferentially prepared on bone. Tools for day-to-day life stand out, mainly awls and needles, in this case with repairs on the hole and the shaft that indicate heavy use, probably for working skins. The small number of spears throughout the sequence could be because this type of tool was made of another material that is difficult to preserve, such as wood, or a hunting strategy that does not require them.

#### 5. Personal ornaments and portable art

In total 53 decorative items have been recovered, all of them except one from the top section of the sequence (18 in level I, 9 in level II, 35 in level III and 1 in level IV). The absence of these in the lower section could be related to the smaller amount of

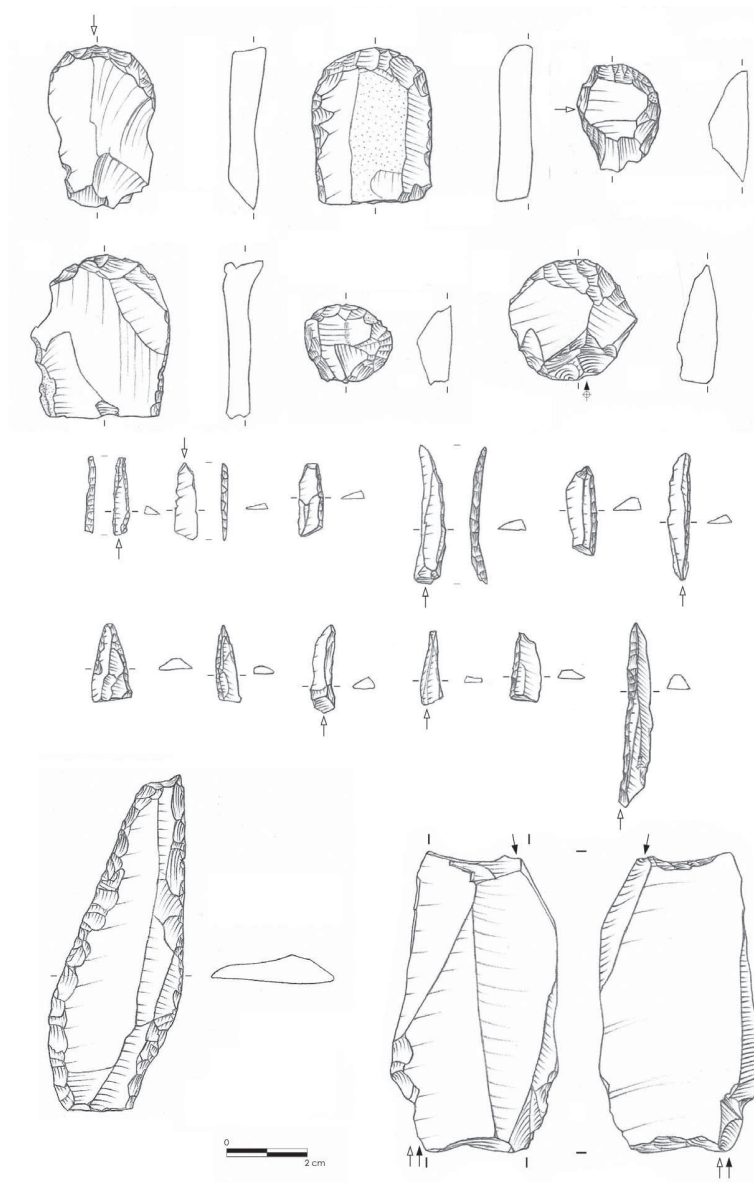


Figure 2. Lithic industry from level I of La Peña de Estebanvela.

sediment excavated. They have been made on gastropods (*Cyclope neritea*, *Trivia arctica*, *Trivia pulex*, *Littorina obtusata*, *Nassarius reticulatus*, *Theodoxus fluviatilis*), except for three stunted deer canines (*Cervus elaphus*) and a fourth on sepiolite. The use-wear analysis shows significant wear that refers to its constant use in the life of these Magdalenian groups.

The upper levels also contained an assemblage of 43 pieces of portable art made on small,

flat, long stones, all of them shale. The art is geometric and has been made using fine incisions. Notches and zigzags are also present but the motif that is repeated throughout the assemblage is a pattern consisting of two opposing sets of parallel lines perpendicular to the largest axis of the support. Only two pieces are not geometric and include configurations of horses superimposed, on one of them, over these decorations (Cacho *et al.*, 2012: 51).



Figure 3. Decorative items on *Cyclope neritea* from level IV of La Peña de Estebanvela.



Figure 4. Decorated shale stone from level II of La Peña de Estebanvela

## 6. Layout and functionality of the settlement

The analysis of the space based on the record from the latest campaigns has detected concentrations of materials of particular interest for finding out about the layout of the space. The most obvious is a crescent-shaped structure discovered in level III, in the central sector of the site, where

several cores and debris and small flakes have been found and which has been interpreted as a knapping area (Ortega 2013: 526-527). In the same level, but in the eastern sector, a concentration of flint was found in an area where the compact calcareous sterile sediment comes into contact with the archaeological deposit. It is worth pointing out that the sterile sediment had been deliberately cut out of this sector. The pieces are arranged on it, almost stacked, in a small area of around 25cm<sup>2</sup>. The entire assemblage is made from the same type of opaline, of excellent quality and uncommon in the lithic repertoire of the site. It mainly consists of large cores, barely shaped, with one or two extractions and good sized decortication flakes back to back. We consider that this concentration could be interpreted as a space that was for storing or stockpiling raw material.

In the eastern sector of level II, attributed to the end of the Magdalenian, three hearths were excavated (Cacho *et al.*, 2007: 236-237). They are flat-bottomed pit hearths surrounded by blocks. Two of them are slightly larger than one metre in diameter and are filled with a 10 to 15 cm layer of ash. The presence of lithic or fauna remains inside is negligible, the main reason for ruling out their use for domestic tasks like cooking or transformation and treatment of lithic raw materials. Furthermore, the presence of a large number of boulders (quartzite, quartz and limestone) with thermal fracturing, which demonstrates that they were heated, points to activities related to using these hearths to accumulate heat.

## 7. Contextualising the sequence of La Peña de Estebanvela in the Magdalenian of the inland Iberian Peninsula

Despite the advances made in the research over these years, it is not easy to contextualise the series of La Peña de Estebanvela in the chronocultural sequence of the inland Iberian Peninsula due to the small archaeological record known to date.

The sequence begins with level VI, whose radiocarbon dating values indicate a middle Magdalenian. The Vergara Rock Shelter (level 5d) (Deza, Soria) has returned similar dates, with which it can be related because the topology of its industry is similar to that of the interior units of Peña de Estebanvela. Level VI can also be linked to the lithic series of the Alejandro Rock Shelter, although it has a slightly earlier date (Utrilla and Blasco 2000:

21). On the southern slope of the Sistema Central, and quite close to La Peña de Estebanvela, is the Jarama II site (Valdesotos, Guadalajara), which does not have any C14 dating values. Its archaeological record is not significant enough to contextualise the sequence in this region (Adán and Jordá Pardo 1989). Monte Rock Shelter (Vellón, Madrid) has radiocarbon dating values that are close to the lower unit of La Peña de Estebanvela and its industry could be attributed to the start of the Magdalenian but it cannot be accurately evaluated until the details have been published (Vega *et al.*, 2008). In Meseta Sur there are another two sites, in the province of Cuenca, which given their dating values could be considered contemporary to level VI of La Peña de Estebanvela, Buendía and Verdelpino (level Vb), but their industries differ in the large number of burins and the presence of fine direct retouch blades, which are not present in level VI of La Peña de Estebanvela (Cacho and Pérez Marín, 1997; De la Torre *et al.*, 2007; Moure and López, 1979).

Human occupations of the Segovia Rock Shelter represented in levels III and IV are placed in an advanced period of the Upper Magdalenian, according to radiocarbon dating values; this fact is also supported by the lithic repertoires, which show a gradual increase in burins compared to scrapers. So far no parallels are known for the industries in these levels of the Meseta.

Levels I and II seem to belong to the same cultural period, with a lithic industry characterised by a large number of blades and a significant presence of points, followed by scrapers, the majority short. These characteristics, along with a significant proportion of large retouched blades, like at the end of the Magdalenian in the French Languedoc and Provence (Escalon de Fonton et Onoratini 1979), and the presence of needles that are not present in the archaeological record of Aziliense, put these levels in the end of the Magdalenian. In Henar valley is La Peña del Diablo 1 (Cetina, Zaragoza) with contemporary radiocarbon dating values (Utrilla *et al.*, 2006) to levels I and II of La Peña de Estebanvela. Its lithic industry shows significant differences with the site in Segovia, as burins dominate over scrapers, but here the number of back-edge blades and the number of points is not as significant as that of level I of La Peña de Estebanvela. The lithic series of Dehesa del Tejado (Béjar, Salamanca) (Fabián 1997) could belong to the same period, although

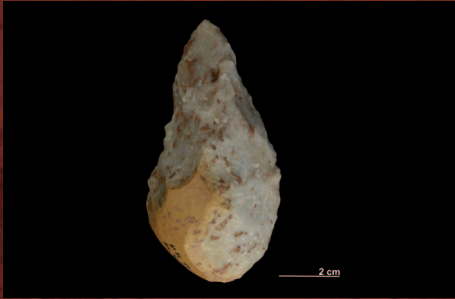
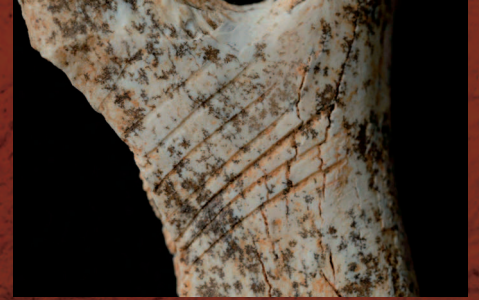
it does not have a geoarchaeological context such as radiocarbon dating. Detailed technology studies are required for the industries attributable to this period of the Magdalenian, which could be compared with the data provided in this respect by La Peña de Estebanvela.

## 8. Final considerations

Today, despite the gaps in the Magdalenian panorama of the inland Iberian Peninsula, we have evidence that these lands were occupied throughout the different stages of the Magdalenian, from the early Magdalenian to the late Magdalenian, as happens in the surrounding area (the Cantabrian coast, the Mediterranean side and the Atlantic coast). These settlements not only occurred in the warmer climates, as happens in level I of La Peña de Estebanvela (according to the micro-mammal and herpetofauna studies), but also during the cold phases, as is the case of the Alejandro and Vergara shelters in Soria, in the Dryas I.

Regarding the exploitation model of the territory, we only have data for La Peña de Estebanvela, which indicates recurrent use of the immediate surroundings for hunting ungulates and some carnivores, trout fishing and possible gathering of wild fruit and nuts.

The clearest indications we have that these Magdalenian groups from the inland Iberian Peninsula had contact with other geographical areas are limited to La Peña de Estebanvela. A number of sea gastropods transformed into decorative objects were found here. These gastropods come from the Atlantic or Mediterranean coast. This implies movement of these Magdalenian groups to these areas in order to collect them but they could also have been obtained through exchanges with other groups that frequented these coastal areas. Further evidence of contact is found in the portable art in this Rock Shelter in Segovia, whose most characteristic motif is well represented in some sites in the French Pyrenees - Gourdan (Haute Garonne), Espelugues (Haute Pyrénées) or Rhodes (Ariège) - or further away from the Meseta, such as Pages (Lot) and Dufauré (Landes). There is even a similarity in its portable art with more remote sites, such as Rochedane near the Swiss border, which would indicate long-distance contact of these Magdalenian groups from the south of the Duero valley and would reflect common symbolism at the end of the Pleistocene.



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# PLEISTOCENE AND HOLOCENE HUNTER-GATHERERS IN IBERIA AND THE GIBRALTAR STRAIT:

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