THE PORTALÓN AT CUEVA MAYOR (SIERRA DE ATAPUERCA, SPAIN): A NEW ARCHAEOLOGICAL SEQUENCE

A.I. ORTEGA[1]; L. JUEZ[1]; J.M. CARRETERO[1,2]; J.L. ARSUAGA[2,4]; A. PÉREZ-GONZÁLEZ[3]; M.C. ORTEGA[2]; R. PÉREZ[1]; A. PÉREZ[1]; A.D. RODRÍGUEZ[1]; E. SANTOS[1]; R. GARCÍA[1]; A. GÓMEZ[1]; L. RODRÍGUEZ[1]; M. MARTÍNEZ DE PINILLOS[1] & I. MARTÍNEZ[2]

(1) Laboratorio de Evolución Humana, Departamento Ciencias Históricas y Geografía, Edificio I+D+I, Plaza de Misael Bañuelos s/n, 09001, Burgos

(2) Centro UCM-ISCIII de Investigación sobre Evolución y Comportamiento Humanos, c/ Sinesio Delgado, 4. Pabellón 14, 28029 Madrid

(3) Departamento de Geodinámica, Facultad de Ciencias Geológicas, Universidad Complutense de Madrid, 28040 Madrid

(4) Departamento de Paleontología, Facultad de Ciencias Geológicas, Universidad Complutense de Madrid, 28040 Madrid

(5) Departamento de Geología, Edificio de Ciencias, Universidad de Alcalá, 28871, Alcalá de Henares, Madrid

***Abstract**: The site of Portalón at Cueva Mayor, located in the Sierra de Atapuerca (Burgos, Spain), is an important Holocene archaeological site that was excavated in the 70's but from which little has been published. New excavations starting in 2000 have highlighted a deep stratigraphical sequence with human occupations starting in the beginning of the Upper Pleistocene. In this paper, we present for the first time this stratigraphical sequence with a set of radiocarbon datings comprising from 30.000 BP to 2000 BP.*

***Keywords**: Sierra de Atapuerca; Estratigraphy; Radiocarbono datings; Holocene, Upper Pleistocene*

***Resumo**: O sítio de Portalón, Cueva Mayor, situado na Serra de Atapuerca (Burgos, Espanha), é um importante sítio arqueológico do Holoceno, escavado na década de 70, e sobre o qual pouca informação havia sido publicada. Novas escavações, iniciadas em 2000, puseram a descoberto uma longa sequência estratigráfica, com ocupações humanas que remontam ao Pleistoceno Superior. Neste trabalho, apresenta-se pela primeira vez, a sequência estratigráfica, para a qual existe um conjunto de datações por radiocarbono compreendidas entre 30.000 BP e 2000 BP.*

***Palavras-chave**: Serra de Atapuerca; Estratigrafia; Datações de radiocarbono; Holoceno; Pleistoceno Superior*

INTRODUCTION AND HISTORICAL FRAME

The Sierra de Atapuerca is located about 15 km to the east of the city of Burgos, on the northeastern edge of the Northern Sub-plateau of the Iberian Penninsula. This geographic location is strategic. The north-south lines of communication that penetrate toward the interior of the Penninsula pass through it, along with those that develop east-west communicating with the basin of the rivers Duero and Ebro.

This sierra encloses an important karst in which the Cueva Mayor-Cueva de Silo cave systems standout (Martín Merino *et al.* 1981). Its entrance is a large chamber known as the "Portalón of Cueva Mayor" where there has been different occupations throughout its recent prehistory (Fig. 1.1).

The first scientific study of Cueva Mayor carried out in the last third of the 18th century (Sampayo and Zuaznávar, 1868), motivated the visit of other researchers who delivered news of the first archaeological remains of the recent prehistory of Portalón (Carballo, 1910), as well as the existence of diverse panels of post-paleolithic art (Breuil, 1913).

In 1966, Francisco Jordá, professor at the University of Salamanca, carried out the first archaeological excavation of Portalón, but his results were never published. In 1972, Geoffrey Clark, a researcher at the University of Arizona, interested in surveying the Upper Paleolithic sites of the Northern Plateau, made two test pits in Portalón; one 2x2 m that yielded altered sediments to a depth of 2 m, and another of 0.5x2 m that revealed an in situ stratigraphy 2.6 m deep (Clark 1979, 94-95; Fig. 1.2). Clark identified three cultural periods in the stratigraphic sequence, attributing the first three levels (1-3) to the Roman period; levels 8 to 20 to different stages of the Bronze Age and levels 21 to 26 to phases of the Neolithic (Clark 1979, 96).

The interesting cultural sequence detected by G. Clark motivated Juan María Apellániz, professor at the University of Deusto, to get involved in Portalón to get a better understanding of occupations of those that he designated as "population of the caverns" (Apellániz, 1983) (Fig. 1.2). The excavation between 1972 and 1983, permitted Apellániz to define a series of cultural levels verifying the presence of medieval and late roman materials (levels I and II), and an important occupation during the Bronze Age (Level III). This level was in turn subdivided into a stratigraphic sequence of the Final Bronze Age dated to between 940 and 1220 ±130 B.C. (Minguez 2004, 50), a rich Middle Bronze Age sequence with chronologies of 1450±50 B.C., and a Late Bronze Age squence dated to 1690 ± 50 B.C. (Apellániz and Domingo 1987, 263).

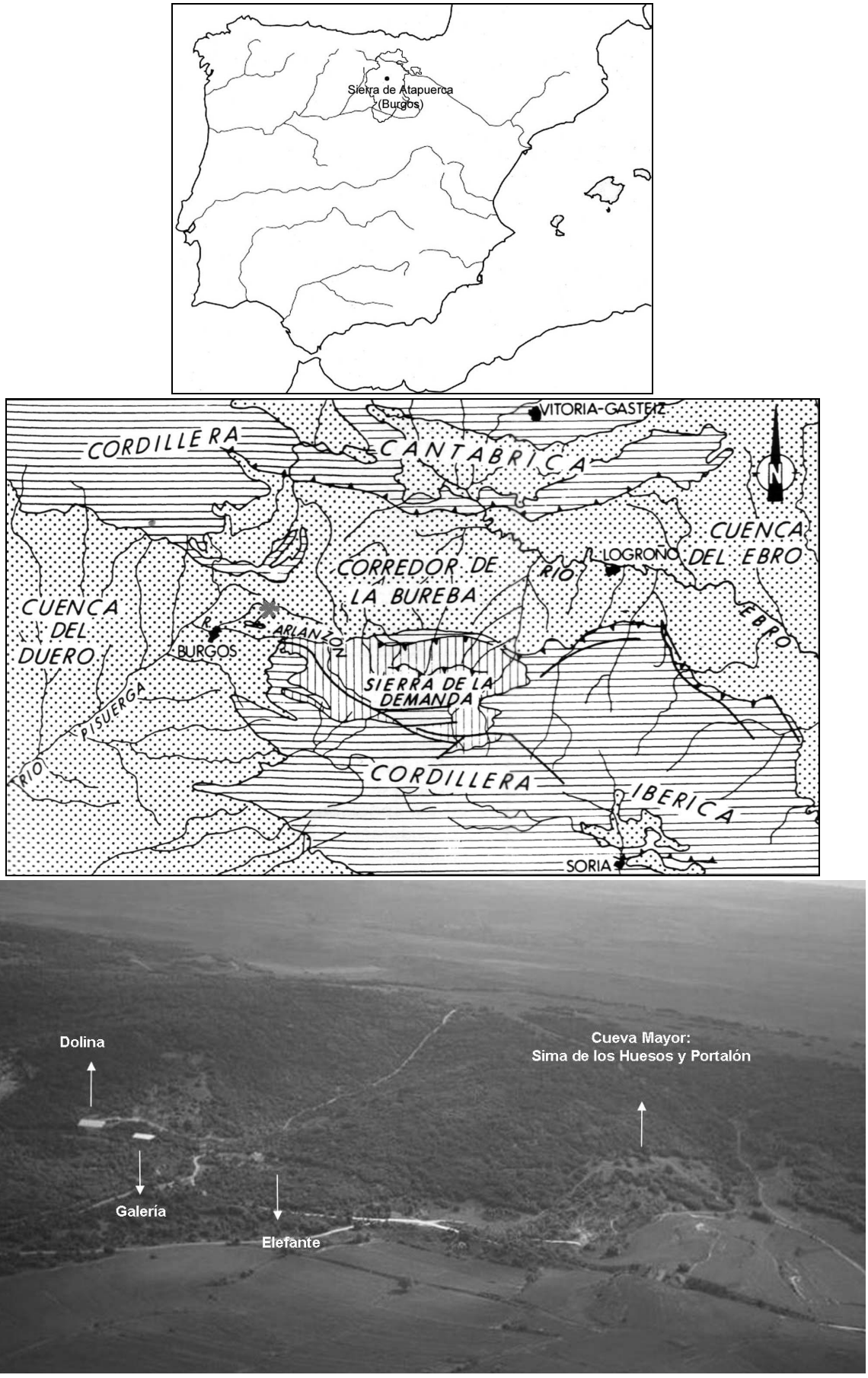

Fig. 1.1. Geographical situation of the Sierra de Atapuerca and the main pleistocene and holocene sites

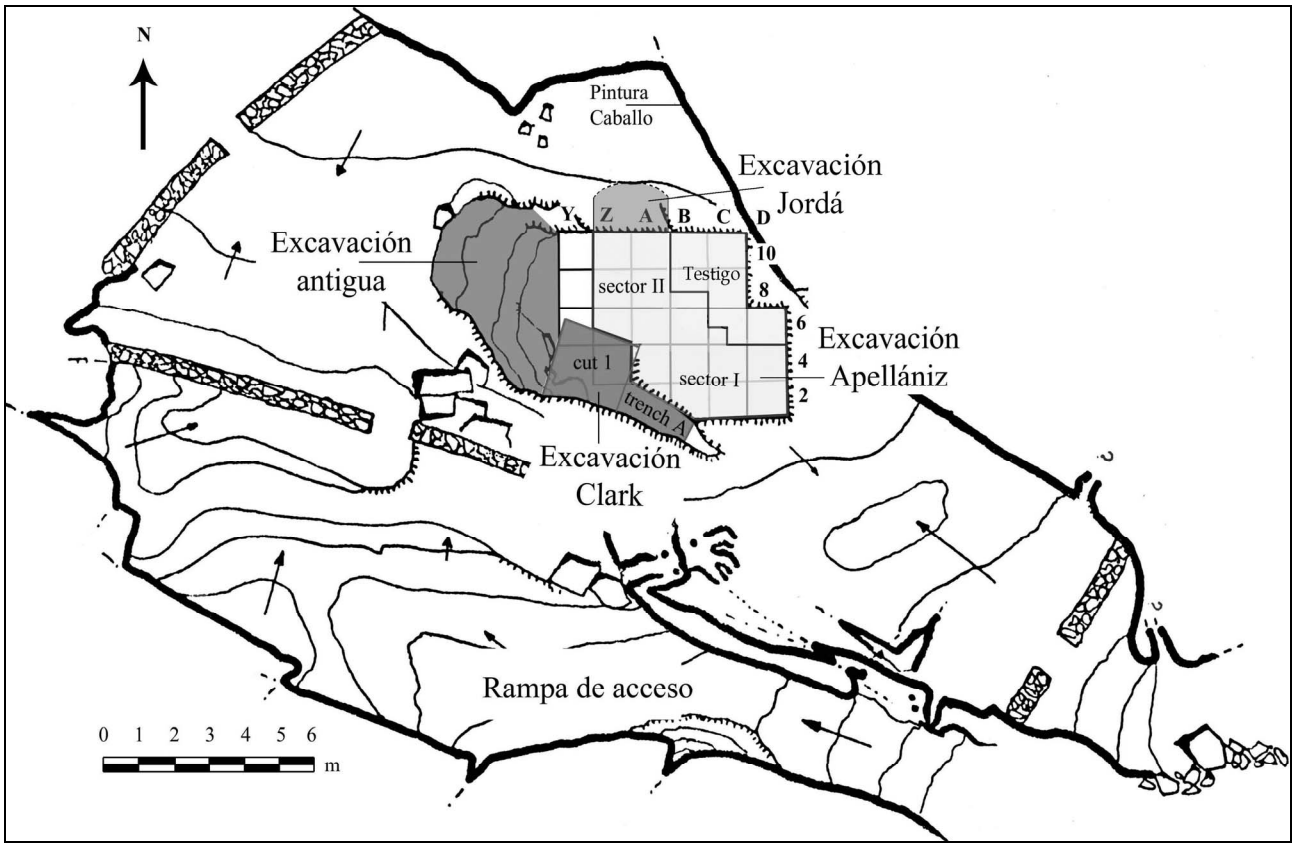

Fig. 1.2. Scaled plan of the Portalón de Cueva Mayor site indicating the different excavations areas

RECENT EXCAVATION OF PORTALÓN (2000-2006)

To a better understanding of the archaeological potential of Portalón we began a new stage of excavations in 2000 within the Proyecto de Investigación de Atapuerca directed by Juan Luis Arsuaga.

Once we delimited the in situ excavation areas of F. Jordá, G. Clark and J.M. Apellániz, we detected the presence of an important excavation in the central part of Portalón, whose authors are currently unknown (Fig. 1.2). From 2001 onward we concentrated all our efforts in delimiting the in situ limits of the site. In order to achieve this, we proceeded to excavate the sediments that filled this earlier excavation, among which we have recovered interesting archaeological material from disturbed contexts (Juez 2005). This intervention consisted of a ditch inclined in an east-west direction of some 2 m in width that gives ways to a hole with an oval cross-section of 2 m in diameter and that, for the moment, has more than 9 m in depth since we still haven't excavated all. Judging by characteristic of this pit we believe it to be a mining intervention.

However, the excavation of the pit has revealed a deep and interesting stratigraphic sequence that was unknown until now.

STRATIGRAPHIC SEQUENCE AND ABSOLUTE CHRONOLOGY

With the current obtained data we have characterized the stratigraphic sequence of Portalón in the North and South profiles and we have divided it into 11 numbered levels from 0 to 10 (Fig. 1.3). The radiocarbon dates (Beta Analytic INC) obtained for the levels of the Portalón sequence are given in Table 1.1.

Tab. 1.1. Radiocarbon dates for Portalón de Cueva Mayor.

Level 0: corresponds to an irregular alteration of the first 15 to 68 cm of the roof of the sequence and composed of a packet by brown muds with organic materials, charcoals, faunal remains and potter's wheel ceramics. It is a partially altered level without absolute dates and with ceramic materials pertaining to the Middle Ages.

Level 1: an ashy layer with disperse charcoals that alternate with dark grey clays forming aggregates, with small limestone klasts, with a maximum thickness of 40 cm. A roman occupation was registered with common ceramics and Terra Sigillata of late-roman and Imperial typologies. There are three radiometric dates for this level: 1980 ± 40 BP, 2040 ± 100 BP and 2050 ± 100 BP.

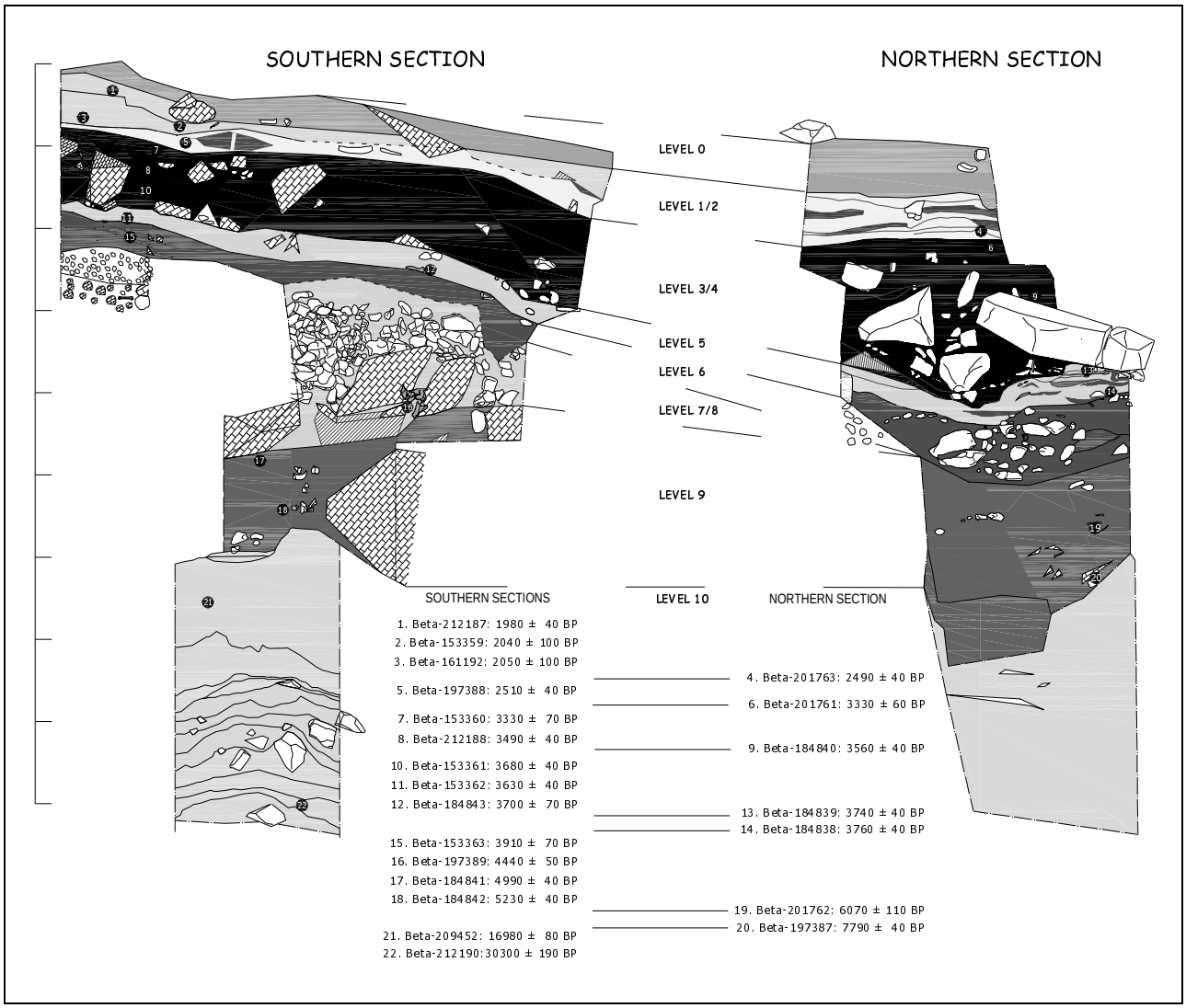

Fig. 1.3. Stratigraphical sequence of the northern and southern profiles from Portalón de Cueva Mayor site indicating the different excavations areas

Level 2: consists of some sediments of anthropic and organic origins where they alter marks with abundant ash and clayey muds of dark tones (7.5YR 7.1), reaching a maximum depth of 30 cm. Hand made ceramics corresponding to the cultural phase of Iron Age I have been recovered in this level, as well as the remains of domestic fauna. In the north profile it is not clear the subdivision between levels 1 and 2. There are two dates for this level, one of 2510 ± 40 BP and the other of 2490 ± 40 BP.

Level 3: consists of a thin collection of dark colored sandy-clayey-muds, of some 16 cm in thickness, where there is plenty organic material with numerous charcoals remains and elements of material cultural, documenting fragments of hand-made ceramic pertaining to the protocogotas cultural phase and abundant faunal remains. The absolute chronology puts this level in the Middle Bronze Age, with two dates of 3330 ± 60/70 BP.

Level 4: deep homogeneous packet, of sandy-clayey-muds, of between 70 and 150 cm in thickness, increasing its depth toward the interior of Cueva Mayor. This level is rich in organic and charcoal material, emphasized by the presence of numerous klasts and big limestone blocks originating from the collapse of the walls and roofs of the cavity. Abundant hand-made ceramic fragments are documented in its profiles, as well as pieces of lithic and bone industry, together with the faunal remains. We place the chronology of this level in the Early Bronze Age with four dates that go from 3490 ± 40 BP to 3680 ± 40 BP.

Level 5: level of sandy-clayey-muds of grayish tones (10YR 6/1), with abundant charcoals and ashes in its base. The average depth is of some 35 cm, where there are abundant fragments of handmade ceramics and domestic faunal remains. They show typical dates of the transition of the old Bronze Age to the

Chalcolithic that goes from 3630 ± 40 BP and 3760 ± 40 BP. The intervention of Apellániz culminates in this level, documenting a fragment of bell beaker ceramic.

Level 6: level of sandy-clayey-muds of anthropic origin, with abundant organic material and charcoals that have a grayish color. Towards its base, lenses of ash are documented. It presents an average thickness of 30-35 cm. The presence of ceramic and faunal remains are also documented in this level, presenting a date pertaining to the Chalcolithic (3910 ± 70 BP). The intervention of Clark concludes in this unit.

Level 7/8: stand out for their stoney and anthropic attributes, consisting of angular limestone rocks and subangulars rocks without matrix that increase in size with depth. In the base of this level big limestone blocks appear, among which stand out two flat stones of some 70 cm in height by 50 and 65 cm in width respectively. This level presents the form of a tumulus that reaches a maximum height of 200 cm in the Southern Profile, while diminishing in size toward the north. In this structure a relatively abundant amount of human remains are documented, as well as ceramic and faunal fragments. The remains of a large vessel with decorations of pellets, a copper awl and the presence of two goats in anatomical position over the two large flat stones stand out, and have been given a chronology of 4440 ± 50 BP. All this indicates the sepulchral use of this cavity during periods of the chalcolithic.

Level 9: is made up of the final part of the Holocene sequence, composed of a very homogenous packet with anthropic origins, characterized by clayey-sandy-mud sediments with blackish tones, with abundant organic material and rich in charcoals. In this unit sub-angular limestone stones and small calcareous blocks are observed, together with some round stones of quartzite. It has an average depth of 125 cm in its southern profile that increases toward the north at 170 cm. In the base of this large layer the presence of a silo structure is documented with a depth of about 75-80 cm and a diameter of 130 cm that has in turn affected the lower levels (N9a and N10). The documented archaeological record indicates the presence of handmade ceramic fragments and faunal remains, as well as lithic and bone industries. However there is a need to distinguish two very different chronological moments within this level. The superior part of this level is dated at 4990 ± 40 BP, the upper middle level at 5230± 40 BP and the base at 7790 ± 40 BP. An awl of clearly neolithic typology recovered in the northern profile stands out between the elements of material culture and has a chronology of 6070 ± 110 BP. As we see, these dates indicate an occupation situated fully within the Neolithic and another during the Mesolithic period, with a temporal hiatus of 1720 years between both occupations. We still have not detected any remains of ceramics during the visual analysis of the base of level 9 (mesolithic occupation).

Level 9a: a small level of bat guano of between 5 and 8 cm of thickness characterized by sterile muddy-sand sediment for the moment, without absolute dates. It represents the transition between the two documented sedimentary units in Portalón de Cueva Mayor, the superior holocene (N0 a N9) and the inferior pleistocene (N10).

Level 10: This level represents the inferior sedimentary unit that has been in turn divided into 12 numbered sub-levels from P1 to P12. It is characterized by an alternation of angular limestone clasts of more than 1 cm originating from debris flow, containing a muddy-sandy-clay matrix of brownish and orangish tones, inserted between levels of fine sediments which show a near absence of clasts. It presents a visual depth of more than 360 cm, and is abundant in microfaunal remains of cold environments along with a small amount of macrofauna. Small flakes of flint (BP2G) were recovered in the P8 sub-levels. Level 10 belong to the Upper Pleistocene with a date of 16.980 ± 80 BP for the P1 sub-level (around 60 cm of the contact with N9a) and another of 30.300 ± 190 BP for the sub-level P11 (around 335 cm of the same contact).

INTERPRETATION OF THE SEQUENCE OF PORTALON AT CUEVA MAYOR

The archaeological sequence of Portalon has been described in this paper. We can conclude that as the Portalon of Cueva Mayor has been used like habitat place during a long and intense period of time, the stratigraphic sedimentation is continuous and homogenous. Therefore, the correct interpretation of the different occupation levels is very difficult.

The stratigraphic sequence of Portalón presents two principle sedimentary units. The lower unit, identified as N10, has a visible depth of 360 cm, and is characterized by debris flow of clasts with clayey matrix of orangish color, with absence of organic material and with hardly any human intervention. Chronologically it pertains to the last third of the Late Pleistocene and stands out for its paleontological nature and for a weak presence of human activity between 30.000 and 17.000 BP. In the future we may be able to investigate the human settlement of the Plateau during the beginning of the Late Paleolithic.

Above this lower unit, a very clear contact made up of a level of bat guano (N9a), lies the upper unit, with a maximum depth of 630 cm and comprises levels 9 to 0. It is characterized by sedimentary homogeneity and grayish coloring with an abundance of organic material and numerous archaeological remains indicative of highly anthropic levels. In the complete sequence the presence of

stones and blocks coming from the roof of the chamber is frequent, being of greater size in the upper unit.

The cultural sequence of this unit indicates the existence of an intense human occupation throughout the Holocene. This occupation began with still very poorly known phases of the Mesolithic and Neolithic (N9). We hardly know the characteristics of these occupations that must have involved nomadic populations in which livestock and agriculture probably complemented the hunting. The chronological results might be related with those of the sites of the immediate surroundings like Galeria del Sílex (Cueva Mayor), Abrigo del Mirador, (also in Sierra de Atapuerca), with the Cascajos (Quintanadueñas) nearby settlement, with Abrigo de Mendandia (Saseta-Treviño) site, Cueva de la Vaquera (Segovia) and Cueva Lóbrega (La Rioja).

The Neolithic sequence culminates in a tumulus structure with funerary characteristics associated with megalithism at the end of the Neolithic and with the Chacolithic world (N8-7), evidenced in Atapuerca and Rubena villages (both in Sierra de Atapuerca).

The continuous sequence of the Bronze Age levels (N6 a N3) represent the best understood moment due to continuous excavation works. The great diversity and quantity of elements of cultural material indicate the importance of the activities developed by the human groups that controlled the surrounding territory. There are several excavated cavities within the Sierra karst complex: Galería del Sílex, Abrigo Mirador and Cueva Ciega at Ibeas de Juarros and Cueva de la Revilla at Atapuerca, are the most outstanding.

Finally, the archaeological sequence completes with the phase of occupation of the proto-historic (N2) and historic epoch (N1 and N0), when the cavity was utilized as sheepfold in order to hold the livestock. This human occupation might be related with the nearby Tritium Autrigonum castrum (Monasterio de Rodilla) and the Roman villae from the Atapuerca village.

CONCLUSIONS

The current archaeological sequence from the Portalón at Cueva Mayor takes on a singular importance due to the scarcity of information on the late Upper Pleistocene, Mesolithic and Neolithic cultural periods in the interior Peninsula and, in particular, in the Northern subplateau.

In the Portalón sequence two main sedimentary sequences can be detected. The first one (the lower unit) is correlated with the Upper Pleistocene, which has a very important paleontological record, and a weak human activity presence placed between 30.000 and 17.000 B.P. The second one (the upper unit) is correlated with the Holocene and is characterized by anthropic evidences. This unit can be divided in two phases, one of them related to the Recent Prehistory, with a continuous settlement in the Mesolithic and Neolithic. It is remarkable the sepulcral character developed during the end of the Neolithic and Chalcolitic, which intensified the Bronze Age occupation. The second cultural phase of Portalón is interpreted as a low use of stable during Protohistoric and Historic periods.

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