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Atapuerca archeological sites

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CAMINO DE SANTAGO
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Burgos

Junta de Castilla y León

Once upon a time...

The Atapuerca Mountain Range is a modest limestone elevation, between the valleys of the rivers Arlanzón and Vena, east to the city of Burgos. Under its surface, which is populated with holm oaks and Gall oaks, a complex web of galleries is developed.

The visits to the cavities of the mountain range are very old. Some authors quote Arabic inscriptions on their walls dating from the 13th century. Also, there are documents referring the excursion made by the abbeys of Las Huelgas during the 16th century. At the end of the 18th century, a local expedition who entered the karstic complex discovered a great quantity of bones and a tusk of great dimensions, related to «an atrocious beast bred at this mountain range». In 1863, another visit to this cave registered a great deposit of human bones and, besides, «a boar's tusk and a large seashell from remote seas, because of its strange form». Five years later, the first illustrated geomorphological description of these caves was published, a pioneering speleological study and, between 1896 and 1901, a railway ditch was excavated on the south end of the mountain range, revealing cavities stuffed with sediments.

Panoramic view of the north-east hillside of Atapuerca Mountain Range, with the village of the same name at the back.

Isidro Gil's drawing of the entrance to Cueva Mayor, made in 1868.

17th August 1978: Apellániz and his team excavating in El Portalón.

The works of the mining train cut the limestone and the silted-up cavities.

Bear canine.

While different specialists had been focusing for decades on the cave paintings located by Jesús Carballo in Cueva Mayor (1910), the developments of the ditch were ignored by the scientific community, except for the geologist J. Royo (1926) and the speleological group Edelweiss, that in 1962 discovered fauna remains. From this moment on, the studies in the ditch and in all the complex proliferated.

In 1976, Trinidad de Torres, coordinated by Emiliano Aguirre, studied the extinct bears of the peninsula. With the collaboration of J.M. Apellániz's team, who was working at Portalón, he discovered inside Sima de los Huesos the first human remains, the «AT-1» jaw. Aguirre organized a research team which he directed from 1978 to 1990 and which keeps on working till the present day under the care of Juan Luis Arsuaga, José María Bermúdez de Castro and Eudald Carbonell.

Excavation and study

Though it is the most garish phase, the excavation (20 to 30 days a year) only represents the 15% of the work at Atapuerca. Before, the exploratory drilling of the whole area and, after, the processing of the recovered materials have been necessary: cleaning, restauration, cataloguing, and packing. All the samples are analyzed in the lab. Lastly, all the (geological, botanical, paleontological) data are compared and results are interpreted.

The exploratory drilling identifies the place where excavation must take place. Surface sampling, trial excavation and radio detection give us information about the geological structure under the surface.

The excavation requires an absolute order. A graph paper organizes the area and locates the samples and the pieces which are found. They are identified with acronyms indicating the name of the archeological site, the level of the excavation, the date and the number for each piece. With brushes, pick-axes, trowels, burins and a lot of patience, the excavation scrutinizes the land and descends, year after year, towards the lower levels.

All the earth taken from the excavation is washed and sifted next to the Arlanzón river. In this way, no sample gets lost, even if it is very small.

One characteristic that singled out, since the beginning, the Atapuerca team was its interdisciplinary nature and its globalizing research. Apart from paleontologists and archeologists, there are palynologists that recover pollen dating from hundreds of thousands of years, geologists analyzing the variation of the magnetic field in different types of clay, chemists making tests in order to know the age of objects and levels, and an innumerable list of research processes.

The archeological sites

TD 11 sterile level (120,000 years ago)
most recent level with fossils (300,000 years ago)
TD 10
TD 9 (sterile)
TD 8
TD 7 paleomagnetic inversion
TD 6
TD 5
TD 4
TD 3
TD 2 (sterile)

BONE CHASM (SH: Cueva Mayor complex).
Great accumulation of remains: 420,000 years old.

ELEPHANT CHASM (TE: Elephant Ditch).
21 levels all along 25 metres, dating from more than 1.5 million years.

space of 15 m²
10 metres
13 metres

GALLERY (TG: Gallery Ditch).
3 levels with fossils dating between 128,000 and 350,000 years.

GREAT DOLINE (TD: Doline Ditch).
11 levels along 18 metres high.

Presence of:
fauna humans industry

most ancient level (more than one million years)

Railway Ditch

The archeological exploratory drillings have confirmed that Atapuerca Mountain Range and its field of influence amass a great paleontological wealth. Due to the fact that the process is slow and expensive, they only work in some archeological sites. In the ditch there are nowadays three active ones (Dolina, Galería and Elefante), though there are more exposed cavities after the carving produced by the railway works. Underground, there are the archeological sites of Cueva Mayor (Portalón, Sima de los Huesos and Galería del Silex), Cueva Ciega and Mirador. And on the surface, they work on Hotel California, Hundidero and Valle de las Orquídeas.

Atapuerca Mountain Range is located in a natural geographical corridor connecting the Ebro River valley and the Castilian plateau. This location has favoured the movement of animals, men and cultures since very remote times. Besides, the mountain range hides an intricate system of caves which has favoured the accumulation and preservation, till our times, of proofs of human occupation throughout thousands of years, turning this settlement into a unique place in the world.

The importance of being Atapuerca

- Atapuerca archeological sites, together with the ones at Dmanisi (Georgia) and Orce (Granada) possess the oldest human remains in Eurasia.
- Atapuerca amasses the biggest hominid collection located in the same place, with 1.2 year-old *Homo* sp, *Homo antecessor* (a new species) and *Homo heidelbergensis*.
- It possesses a great number of human fossils dating from the Middle Pleistocene, 90% of the world record; skull number 5 (*H. heidelbergensis*) is the most complete in the world.
- The most ancient proof of cannibalism has been dated.
- It is a world referent in interdisciplinary and global research.

The paleontological sites at Atapuerca Mountain Range (Burgos, Spain) were declared World Cultural Heritage by UNESCO in the year 2000.

In Atapuerca Mountain Range, the oldest human presence recorded is 1.4 million years old. Apart from the human remains from the Pleistocene, the occupation of the territory by Neanderthal, Neolithic, Bronze, Iron, Roman and medieval cultures has been confirmed.

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What's Atapuerca «telling» us?

1. Trinchera - Sima del elefante (TE) Elephant Ditch

Since 1996 and until 2007, apart from abundant fauna, it was the archeological site with the oldest proof of human occupation at the whole mountain range: stones from the surroundings carved in a very simple way. In 2007, «the responsible» of those carvings appeared. In TE-9 level, a fragment of the jaw of a hominid, dating from 1.2 million years, was found; and in 8 level, dating from 1.4 million years, a silex chipping is recovered.

Was it *Homo antecessor* or, rather, a new species? For the moment, it has been called *Homo* sp.

Maybe these hominids are descended from groups who departed from Africa or Asia more than two million years ago and arrived in the Peninsula after crossing Europe, surrounding the Mediterranean. Another hypothesis contemplates an entrance through Gibraltar Strait. A third one mentions different surges, etc.

2. Trinchera - Galería (TG)

300,000 years ago, Galería archeological site was a natural trap in which horses, deer, bison or rhinos got trapped, animals of which the hominids (*Homo heidelbergensis*) inhabiting the mountain range made the most. Together with the animal bones, touched up hand axes and stone chippings (implements used to dismember them) have been found.

Flint is the most used rock and hand axe is one of the most characteristic tools in Galería.

Some tools were made out of stone chippings, fragments obtained by hitting flint (silex) with a river pebble.

La Bureba

Sierra de Atapuerca

Meseta castellana

La Brijula defile, in the dividing line separating the Ebro and Duero river basins, has always been a compulsory passage between the Ebro river valley and the plateau. Atapuerca is located at the end of that natural passage or «Corredor de la Bureba».

3. Trinchera - Gran dolina (TD)

In 1994, the TD-6 level of the Dolina archeological site rewrote the theory of human occupation in Europe, according to which «the oldest hominids in Europe would not be more than 500,000 years old». In this 850,000-year-old level, bone remains of 11 individuals were discovered and classified as belonging to a new species called *Homo antecessor*. Besides, the remains of these individuals were cannibalized, being this the first register of this practice till the present.

TD 2: 1 million years, cold climate. Doline is closed.

TD 3: the average temperature rises. Doline is open.

TD 4: archeological industry appears.

TD 5: arid and hot climate with periods of intense cold. Sabre-tooth tigers.

TD 7: Mediterranean forest with evergreen oaks, olives and vines.

TD 8: period of humid climate. A collapse closes the cave.

TD 9: warm climate.

TD 10: 350,000 years. A very cold climate. The cave is occupied by *H. heidelbergensis*. Cave is open again.

TD 11: 300,000 years. A very rigorous climate. Very few remains of fauna.

Eleven stratigraphic levels keep on generating detailed information about fauna, vegetation, sightseeing and many more aspects which are being completed yearly, as the level of excavation descends.

4. La sima de los huesos - Cueva Mayor

Everything seems to indicate that the hominids inhabiting Cueva Mayor, 420,000 years ago (*Homo heidelbergensis*), gathered here their dead ones. One after the other, men, women and children were thrown down the chasm, forming one of the biggest paleo-anthropologic deposits of the world. Besides, remains of lions, bears, lynxes, wolves..., but there are no herbivores. After taking out three tons of sediments, the 30 percent of the sediment gathered in the chasm, only a rough hand axe made of quartzite, as implement related to human beings, has been found.

H. heidelbergensis was a robust, right-handed hunter (1.75 m high and 110 kilos).

5. La galería del silex - Cueva Mayor

3,000 years ago, this cave was occupied by peoples of the Bronze Age and used as a sanctuary. Pots and animal bones were fragmented intentionally and dispersed inside, taking part in a complex and symbolic jigsaw puzzle.

Also, symbols engraved on the wall and on some pieces of pottery were found. The cave was closed accidentally, preserving its inner part intact till the present.



Portalón archaeological site is still providing with archeological material which confirms its occupation throughout thousands of years, from the Neolithic till the Medieval Age.



A thirteenth century Almoravid *dobla*, located at Portalón in 2010. Medieval gold coin minted in the Muslim kingdoms, used till the fall of the Kingdom of Granada.



Entrance to Portalón.



Choir Hall.



Cave paintings at Galería del Sílex (Flint Gallery).

Reconstruction of the Bronze Age pots found at Flint Gallery



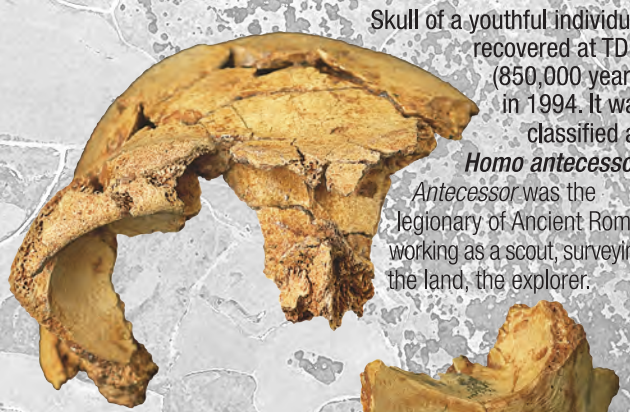
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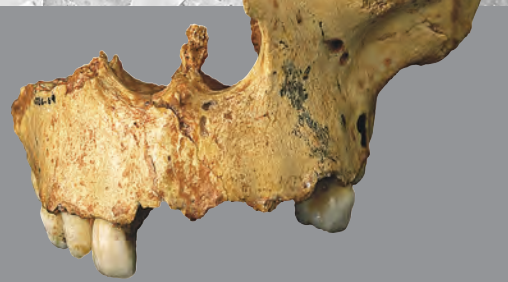
Bronze Age gold bracelet. Cueva del Silo (Silo Cave), 2006.



Entrance to Cueva del Silo.



Skull of a youthful individual recovered at TD.6 (850,000 years) in 1994. It was classified as *Homo antecessor*. Antecessor was the Legionary of Ancient Rome, working as a scout, surveying the land, the explorer.



In the upper strata (more modern) at Trinchera-Dolina (TD), there are flint stones carved according to a technical system called «Mode 3» or Mousterian. Under these, a rougher archeological industry appears, called «Mode 2» or Acheulian and in the lowest levels we find animal bones with cutting marks and stone tools, more than 800,000 years old, according to «Mode 1» or Oldowan, the most rudimentary type of carving.



Trinchera-Elefante (TE), some days before the beginning of the season of excavation, in which archeological industry will be found in a 1.4 million-year-old stratum.



A 1.2 million-year-old fragment of a jaw (TE 9). It is recorded as *Homo sp.*



Remains of Neanderthal carving at Hotel California. At the Valle de las Orquídeas (Orchid Valley) archeological site, examples of 30,000-year-old archeological industry appeared. The workshops on the surface of this species, who occupied the mountain range 50,000 years ago, are abundant.



Archeological sites at Trinchera del ferrocarril (Railway Ditch) in 2013.



Sima del Elefante (Elephant Ditch)

Galería (Gallery)

Trinchera del ferrocarril (Railway Ditch)

Gran Dolina (Great Doline)

Hotel California

Trinchera del Ferrocarril Railway Ditch

Gran Dolina (TD) Great Doline

Galería de las Estatuas Statue Gallery

Sala del Coro Choir Hall

Greater Cave

Cueva Mayor

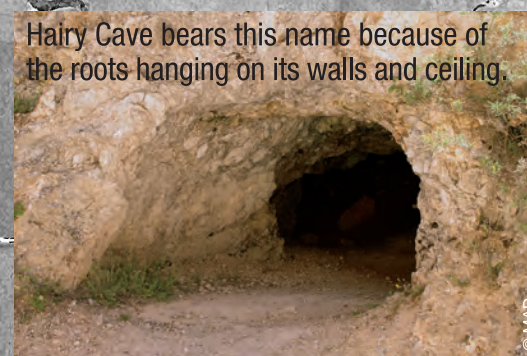
Galería del Sílex Flint Gallery

El Portalón

Sima de los Huesos (SH) Bone Chasm

Silo Cave Cueva del Silo

Vantage Point El Mirador



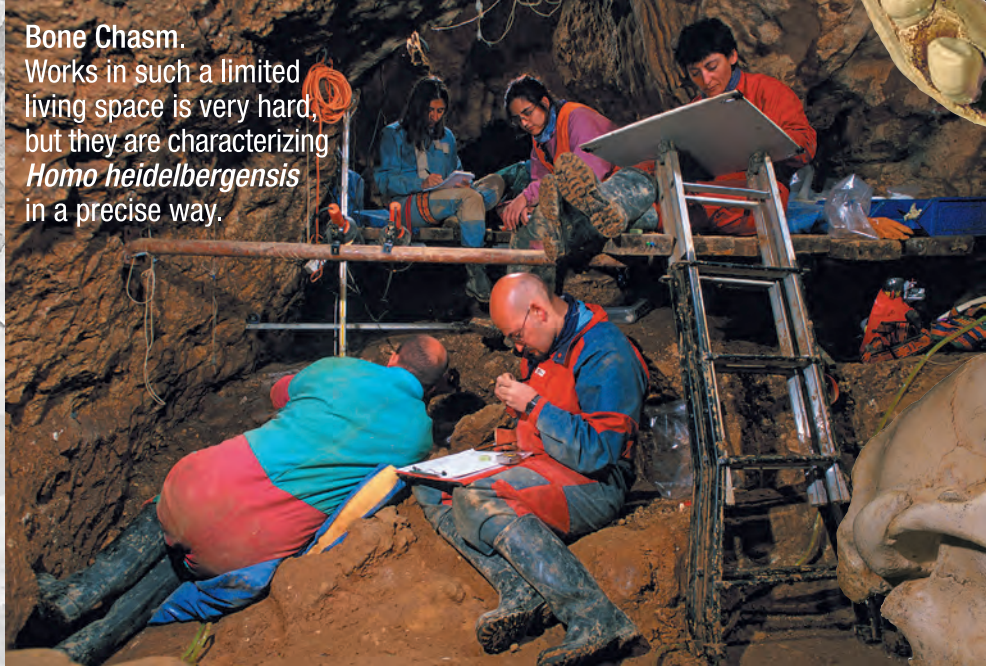
Hairy Cave bears this name because of the roots hanging on its walls and ceiling.



Skull nº 5. It is the most complete skull of a hominid (*H. heidelbergensis*) included in the world paleontological record.



In 1992, skulls number 4 and 5 (in the picture) appear. In 2013, more than 7,000 bone remains of *H. heidelbergensis* have been recovered at this archeological site, belonging to 28 individuals who lived in the mountain range 420,000 years ago. The 70% remains unexcavated.



Bone Chasm. Works in such a limited living space is very hard, but they are characterizing *Homo heidelbergensis* in a precise way.

AT-1, a *H. heidelbergensis* jaw, is the first human remain discovered at Atapuerca (1976).

A bear's skull (*Ursus deningeri*), 420,000 years old. Bone Chasm.



As opposed to the cavities of Cueva Mayor system, formed after Cretaceous limestone, El Mirador is located at a block of conglomerates dating from the Oligocene.

Mirador Cave, with a view of Zalduendo, is providing with relevant information about the first stockbreeders and farmers who populated this area during the Neolithic, 7,000 years ago.



CASTILLA Y LEÓN