

## &gt;NEWS FROM ATAPUERCA IN ENGLISH



## A selection of highlights from the previous issue

## &gt;HEATED DEBATE OVER HEIDELBERGENSIS ORIGINS.

## New Homo antecessor studies change evolution map.

>Atapuerca hominids had short life expectancy due to excessive use of teeth

>Reconstructing human phylogeny is a difficult task, with very few known sites in the world containing anthropological remains. Every new discovery, every new analysis, seems to turn every previous model upside down. That is exactly what has happened following the description of newly discovered bones from 1.6 million years ago in Georgia, and a complete skull in Ethiopia, dated at around 1 million BP.

>A study of Homo antecessor teeth by Bermúdez de Castro's team, published in the Journal of Archaeological Science, based on new datings of the Bones Pit (400,000 years), seems to show that there is still a link missing in the chain that connected the remains from Dolina (800,000 years) and the Bones Pit. This link should be documented in Africa. It would imply the existence of a new migratory wave some 600,000 years ago, at the time when there is evidence of large-size bifaces in Europe such as typical Technological Mode 2 (Acheulian) cleavers and hand axes that began in Africa more than 1.5 million years ago.

>According to a study by the Atapuerca Research Group (ARG), Homo heidelbergensis (Bones Pit, 400,000 years BP) was not a descendent of Homo antecessor (Gran Dolina, 800,000 years) because such profound differences between the two hominid types are impossible in such a short time span. The hypothesis is that there a different species came to Europe roughly 600,000 years ago, and, regardless of whether or not it mixed with H. antecessor, gave rise to H. heidelbergensis.

## WHO WAS HOMO ANTECESSOR?&gt;

This is the great question asked in the course of the last 9 years by ARG paleoanthropologists. Every answer they have given and every new world discovery has triggered a reaction amongst forensic researchers.

In 1997, the ARG proposed that Homo antecessor was possibly the last common forebear to the line that led to the Neanderthals in Europe (with H. heidelbergensis as the intermediate species), and to Homo sapiens in Africa, where H. rhodesiensis might have been the intermediate species.

This evolutionary model also suggests that H. antecessor may have been a species that arrived from Africa, where it may have lived a million years ago. Some

paleoanthropologists believed that H. antecessor was simply an older H. heidelbergensis, and that the separation between the African and European lines was more recent. For several archaeologists, the Gran Dolina site dates back a little over 500,000 years old, not 800,000.

The discovery of several skulls in Dmanisi, Georgia (Transcaucasia), dated at over 1.5 BP, provided support for the idea of a late occupation of Europe in comparison with the early colonization of Asia. The exhumation of a skull in Ceprano (Italy) and extremely old tools in Guadix-Baza (Granada) provided backing for the age and status of Homo antecessor, while the recent Homo sapiens discoveries in Ethiopia dating back more than 150,000 years confirm the African origin of our species.

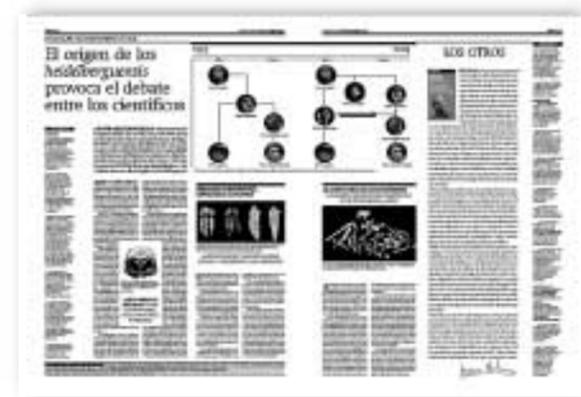
A fresh article published in the Journal of Archaeological Science by Bermúdez de Castro, Sarmiento, Martínón and Lozano explains the difficulty of accepting that heidelbergensis derived exclusively from antecessor, and that the differences between them are hard to reconcile with the new Bones Pit datings (400,000 BP): they are too close to the Gran Dolina period for the changes detected in these hominids' teeth to have occurred. The authors suggest that such differences can only be explained if we accept the arrival of a new species in Europe - one that gave rise to H. heidelbergensis, with or without hybridising with the Dolina and Ceprano antecessors. In this context, the remains discovered last year in Daka (Ethiopia), associated with Acheulian industry and dated at 1 million BP, may be the best candidates for definition as the new African emigrants who colonised the Iberian Peninsula.

## HOMINIDS: A SHORT LIFE?

A study by José María Bermúdez de Castro's team from the National Museum of Natural Science, published in the US journal PNAS, concludes that the lifespan of Pleistocene human groups was not more than 50 years without the help of the rest of the group.

The researchers analysed upper and lower incisors of H. antecessor from Gran Dolina and H. heidelbergensis from the Bones Pit to evaluate their wear pattern from the time when the central and lateral incisors come into use (7 and 7.5 years respectively), until the individual's death. Wear reduces with age. It is greatest in very young individuals and low at an older age, however all the calculations coincide in one conclusion: by the age 40-50, these teeth were so worn that they could not have been used on food.

The causes of this heavy tooth wear is linked to an abrasive diet, excessive contact between upper and lower teeth and/or the use of the teeth for non-chewing tasks such as hide curing and branch stripping. Any of these causes would have limited an individual's ability to process food efficiently. In the absence of cooked nutrients or help by companions



to mash their food, they could be expected to die.

In the periods prior to 200,000 BP, most hominids died at an early age, and in fact very few individuals aged more than 40 have been documented at known sites, which strengthens the idea of a short life span in this period.

## THE OTHERS

>Ignacio Martínez Mendizábal Palaeontology Area, Geology Dpt., Alcalá de Henares University.

>In recent years, Atapuerca Hills have become a pilgrimage destination for many Spaniards. A steady, growing stream of visitors irrigates the slopes of our beloved range. People arrive from all points of this bull's-hide shaped geography, alone, with their families, in school groups or with

mans throughout this immense period. Buried in the memory of one of the sites, Gran Dolina, are the remains of the first Europeans, remorselessly devoured by other humans nearly 800,000 years ago. Not far away, in the Bones Pit, the remains of 30-odd human beings have been sleeping together, their lifeless corpses stacked deliberated in a recondite corner, sheltered from the adversities of the weather and pests. Alongside the corpses, their relatives left an object, a hand axe - the oldest known testimony of the love that can even transcend death.

>In contrast to most other prehistoric sites in Spain, however, none of this is visible in the Atapuerca Hills. At other places like Altamira or Cueva del Castillo, visitors can admire cave paintings that vividly portray the artist's emotions. At Atapuerca, ho-

longs to the realm of ideas. Ideas that have been forged by scientific expertise, patiently drawn out and put together by a handful of Spanish researchers in the course of 25 years of painstaking work. Some of these scientists now enjoy a degree of social status and popularity, but the majority are unknown to the general public, unaware of their indefatigable enthusiasm and extraordinary generosity. Many of them, the majority, have devoted their lives to research at Atapuerca under extremely precarious working conditions.

>When I walk through the Atapuerca Hills, I always think about the humans in the past whose remains make the area so important, but I also think about the names of my companions whose work has made it so valuable. A few days ago, I heard an anecdote on TV that was a perfect expression of what I feel for my companions on the Atapuerca team: When asked by his grandson whether he was a hero, an old World War II veteran replied, "Not personally, but I did serve alongside them."

## ATAPUERCA TEAM DIGS IN EXTREMADURA, MADRID AND CATALONIA&gt;

>The "First Extremadura Settlers" project, begun by Carbonell in 1999 with A. Canals and I. Saucedo, is proceeding in search of Lower Palaeolithic evidence at several sites in Cáceres Province. So far, the oldest record is from Maltravieso, which has yielded a large number of bones from hyenas, lynxes, bears, lions and bison dated at approximately 300,000 years. In the latest digging campaign, however, Santa Ana Cave has yielded many tools including polyhedrons that may well prove to be much older. In Malpartida, work is also underway at El Millar and Vendimia, two open-air sites from a later period.

The Maltravieso cave was discovered by scientists in 1956. It features a number of engravings and painted hands from the Upper Paleolithic, although no remains from the period have been found in the mixed sediments dug up so far.

In addition to the traditional Middle Palaeolithic digs at Abric Romaní (Barcelona), this year there will be two new operations in Catalonia. A team from Rovira i Virgili University headed by Robert Sala and Bruno Gómez has completed an archaeological operation at the "La Jueria" site (Sant Gregori, Gerona). The purpose of this emergency dig was to define the prehistoric occupations and uses of the environment by human groups. The chronology of the site (between 300,000 and 140,000 years BP) and the recovery of more of 1000 worked stone tools is an exceptional context to understand the transition from Technological Mode 2 (Acheulian) to Mode 3 (Mousterian) in north-eastern Iberia. This archaeological conundrum is also being studied at the sites in the Atapuerca Hills.

Excavaciones have also begun in Toll Cave (Barcelona), where Dr. Rosell has found a lot of carnivore remains associated with Middle Paleolithic tools. The evidence suggests that the cave was a hye-

na lair where bears hibernated as well and human groups paid sporadic visits 50,000 years ago.

Finally, important work has recommenced in Pinilla del Valle (Madrid), where Baquedano, Bermúdez de Castro and Pérez González are striving to define human occupations dating back to 100,000 years ago.

## ABBA HOTELS: "FOUNDING SPONSOR" OF ATAPUERCA FOUNDATION

>Juan Luis Arsuaga stressed the importance of the involvement of society in research, explaining that it is a task that goes way beyond the limited scope of scientists. At the official sponsorship ceremony, Arsuaga declared that the Atapuerca Foundation is setting an example, with this level and scope of backing unmatched by any other archaeological and palaeontological project in Spain or indeed in the rest of the world.

With this new business agreement, during the next 10 years the Atapuerca Foundation will be able to commit more than 600,000 to research and the company will become an active participant in our research and dissemination projects. In the past, ABBA Hoteles has helped the project with services within its specific business sector.

Abba Hotels Managing Director Guillermo Fuentes also declared that his hotel chain will publicise the Foundation's work using its web site, its presence at international tourist trade fairs and pamphlets distributed to hotel guests.



> SPECIAL MENTION IN SPONSORSHIP AWARDS. The Atapuerca Foundation and its backing companies have received a special mention as the first runners-up in the "13th Annual Awards for Business Sponsorship and Patronage in Spain", awarded by the Catalonia Regional Government.

## &gt; INTERNATIONAL PUBLICITY.

Atapuerca Foundation will publicise the Atapuerca discoveries outside Spain. It will establish contacts and exchange activities with institutions and foundations around the world including the Cervantes Institute and universities in the USA, the Republic of Georgia and Greece.

## &gt; TO COMMEMORATE THE THIRD ANNIVERSARY OF THE DECLARATION OF ATAPUERCA AS A

World Heritage Site, the Atapuerca Foundation organized the First Festival of Cinema and Evolution, which also coincided with a hike from Atapuerca and Ibeas de Juarros to the sites.



a bunch of friends. They all come to learn about the Magic Mountain, the place that holds the memory of human history from its arrival in Europe down to the present day.

>For more than a million years, Atapuerca has witnessed the passage of all sorts of fauna in a landscape setting of vegetation that has never been much different from the way it is now. But above all, these Hills have witnessed the everyday lives of hu-

wever, there are no paintings and no archaeological remains to be visited. Visitors come to the sites in these hills to listen and imagine; they come to hear the explanations by the splendid guides as they show and explain details; they come to imagine, or rather to dream of the presence of these preterite humans.

>There is nothing special in the physical landscape of Atapuerca. What distinguishes this dot in the Iberian geography be-