

>NEWS FROM ATAPUERCA IN ENGLISH



> NEANDERTHALS, EVER CLOSER  
> New research into El Sidrón and Cova Negra sites

> Swedish scientist Svante Paavo is leading a project to rebuild the complete Neanderthal genome. To date, the analysis has recovered up to a million deoxyribonucleic acid (DNA) base pairs from different sites, which is facilitating the appreciation of small differences from Homo sapiens and shows that there was a temporal and geographic variation amongst the different groups of Neanderthals who lived in Europe.

Antonio Rosas and his team have also found morphological variations in their analysis of the El Sidrón in Asturias, possibly due to the effect of the climate and the landscape. They believe that the southern Neanderthals, including the hominids from Valdegoba (Burgos), probably had broader faces and less projection of the mouth than their relatives in the North. The reviews and new anthropological contributions by Rolf Quam, Juan Luis Arsuaga and other colleagues on the basis of the Cova Negra site in Valencia seem to point in the same direction. Arsuaga and Rolf Quam have presented new Neanderthal cranial and post-cranial specimens discovered at old excavation sites, which they believe, in conjunction with the archaeological data, suggests that the humans from Cova Negra formed small, highly mobile groups which occupied the cave during short periods of time.

> Neanderthal cannibalism. For Arsuaga, the Cova Negra fossils are from seven individuals including four children, one adolescent and two adults who may have come from remobilised burials, although some have carnivore bite marks. In El Sidrón, Antonio Rosas and his team, composed of Cayetana Martínez, Markus Bastir, Rosa Huguet and others, identified eight Neanderthals including an infant, a child, two adolescents and four young adults. Unlike Cova Negra, these scientists do not postulate a burial. The marks found on the human fossils reveal that the bones were opened to get at the marrow and that the muscular insertions seem to have been cut for dismembering and defleshing. It all seems to suggest that this treatment at El Sidrón was the result of an act of cannibalism.

El Sidrón could thus join the list of sites such as Atapuerca, Zafarraya and L'Aragó where there is evidence of anthropophagy of different human species, although the causes may be different. Unlike the other sites, there are very few remains of herbivores at El Sidrón (just seven of the 1330 bones and teeth), and in this sense it bears a closer resemblance to the Bones Pit (Sima de los Huesos) at Atapuerca than Gran Dolina. In the Bones Pit however, there are no cut marks on the bones whereas they abound in El Sidrón. It all seems to suggest cannibal feast. Was this symbolic, gastronomic or for survival? Our colleagues working at El Sidrón have decided it was forced by hunger.

> Start and end. Much progress is being made on the start and the end of the Neanderthals. Genetic research has revealed that Neanderthals appeared more than half a million years ago, proving that Homo antecessor from Gran Dolina is still a good candidate. The latest datings of the Homo heidelbergensis specimens from the Bones Pit by James Bischoff (ARG), using highly sophisticated, groundbreaking techniques, sets these obvious forebears of the Neanderthals very close to the 500,000 BP milestone. However, it seems more likely, as Arsuaga thinks, that the previous dates from the Bones Pit (close to 400,000 BP) are more apt because their human fossils are in a more advanced state of Neanderthalization. More recent fossils would therefore include, ranked in accordance with the new datings, those found by Trinidad Torres and Rainer Grün, Bolomor, Valdegoba and Cova Negra (although they contain hominids from several strata and chronologies), Banyoles (now dated at approx. 64,000 BP), and El Sidrón, around 34,000 BP. The occupations and

# A selection of highlights from the previous issue

fossils from several Portuguese sites as well as Zafarraya are thus probably more recent, with some of the Gibraltar levels dated at close to 28,000 BP according to Finlayson, Isabel Cáceres and other scientists. All the evidence seems to suggest that more fossils of more recent Neanderthals are going to be found on the peninsulas in southern Europe from a time when the Cromagnons had already been occupying all of Europe for several millennia.

The latest genetic studies are not quite so conclusive on the question of claims that there was no hybridisation between H. sapiens and Neanderthals, and it is quite likely that there were contacts with profound repercussions, opening up new lines of research into the biological and cultural exchange between the two human species. Perhaps we will discover that 30,000 years ago, humanity was engaged in adding, not subtracting!

ATAPUERCA, CULTURAL BACKBONE OF CASTILLA Y LEÓN

>SILVIA CLEMENTE  
Silvia Clemente. Culture and Tourism Minister. Castilla y León Regional Government

We are striving to publicise one of the world's most important palaeo-anthropological sites and deepen public knowledge about human evolution. The Atapuerca discoveries comprise one of the world's largest collections of human fossils, which is why it was declared a UNESCO World Heritage site in 2000. The Culture and Tourism Department's initiatives concerning Atapuerca have a three-fold thrust: science, culture, and tourism.

On the scientific front, a large-scale action programme is under way in collaboration with the directors of the site to ensure its protection, comprehension, dissemination and publi-

The Museum and the Research Centre will receive 73,027,371 g, the former funded entirely by the Castilla y León Regional Government, and the latter funded 50% by the national government and the other 50% by the regional government. The total contribution by the regional government to the building construction is 64,888,118 g, or 88.85% of the total investment in these two institutions.

The construction of the Human Evolution Museum has required the prior definition of its contents. For this

attractive package, including considerable work on improvements to the access roads, information points and also visitor reception and information aspects. In 2006, 65,000 pamphlets were printed in Spanish, English and French, and a signposting project including the new corporate logo raised the visibility of Atapuerca.

Finally, the Culture and Tourism Department's promotion campaigns in the media and at tourist trade fairs are ensuring that Atapuerca stays in the limelight. One of the new initia-

the National Museum of Natural Science (MNCN), and is now distinguished with the title Doctor Ad Honorem. Prince of Asturias prizewinner for Scientific and Technological Research (1997), full member of the Royal Academy of Exact, Physical and Natural Sciences (2000), Honorary Doctor at the La Coruña University (2001) and soon to be distinguished with the same award by the Burgos University. His long list of publications, project leadership and educational work have made him one of the world's most prestigious palaeontologists.

-Can you remember your first contact with palaeontology?

-It was back in the 1950's. When I was in Granada, I took the road to Arenas del Rey where I found bones of ruminants, antelopes and hippopotami. That was the first evidence of African fossils on this side of the Gibraltar Strait.

-What was the scientific scene like in those days?

-Quite poor, although I had good teachers like my professor and thesis director, Bermudo Meléndez. In 1954 I was given a scholarship to attend some international courses in Sabadell, where I met Miguel Crusafont and found myself in a Spanish environment with a high regard for palaeontology.

-A man of faith devoted to evolution. How was that regarded back then?

-Some frowned on it. In the 1960's, we organized debates on evolution at the Madrid Athenaeum with María Campo Alange, a wonderful literary feminist, novelist and an amazing thinker. The parents' association magazine of a famous private school in Madrid wrote that it had taken a literary countess and a Jesuit with palaeontological yearnings acting as the donkeys of Troy to win acceptance of the

ing them I wanted to visit the site. I was familiar with some of the sites in France and South Africa, and I had heard about Zoukoudian (China). I realised that the unearthing of this volume of human bones, which could be from four individuals, had never happened before in Europe, and there had to be more where they had come from.

-What led you to design and implement the research project?

-When I visited the site, I saw the backfills of the old caves in the Cutting and the whole complex. I was sure there had to be much more, and that it was worth excavating. When I began, I found myself with "something" that was not from the Upper Palaeolithic and was older than the Neanderthals. I saw bones I had seen at African sites dating back more than 700,000 years, as well as others from the European Middle Pleistocene from 300 or 400,000 BP. The first thing I did was to compare the human remains with the L' Arago site in France and the famous Mauer jawbone. I realised that there were similarities and that it was worth a serious effort, not just to take up some of my own time but to get others involved as well. I wanted to start a project that would not just be multidisciplinary but also multi-regional. I was sure Atapuerca was going to be a focal point for Spain and for the whole world as well.

-How did you organise the first dig?

-In 1978, after tricking Eudald Carbonell to join the project along with some young people from Madrid and Zaragoza, I put an ad in the papers to bring in people from Burgos. Aurora Martín and Carlos Díez turned up.

-What backing did you have in the early years?

-It was hard work convincing the authorities and those who were handling the show, or should I say handling the dough. Manuel Fernández Miranda, on the Fine Arts Tribunal, gave me the excavation permit. It was harder for me to get help or support in Burgos.

Almost all the Burgos authorities were against it, however Joaquín Ocio, who at the time was Deputy Chairman of the Provincial Government and José Luis García Díez, Director of the Cultural Centre, gave their assent. Those were the people who lent me their support. Those who did not were, well, everybody else.

-In 1990 you decided to 'abandon' the leadership of your project.

-Well, I wasn't the one who decided; it was the fact that they decided to retire me. I turned 65 and retirement was strict. If you are retired, you can't lead a project. In the last three-year period, I decided to be the coordinator of a three-pronged project with Eudald Carbonell, José María Bermúdez de Castro and Juan Luis Arsuaga. All three had finished their PhDs or were well on the way, and I wanted to see how they would cope with each one directing a sector, and it worked out well. I preferred to look for people amongst those who were already there instead of looking for a new director from the outside.

-Is the dissemination initiative part of the project strategy?

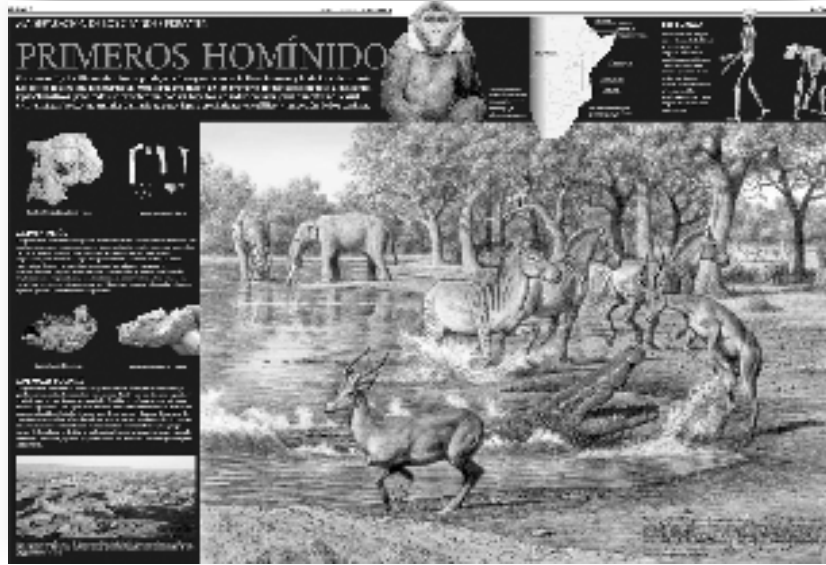
-Science is good for the human being, not just for a more or less mad scientist who spends his time looking for things as a whim. Scientists are not only obliged to know but also to spread their knowledge, and that is what we have done at Atapuerca. Knowledge is enriching and needs to be communicated, and it is different from other human assets like money, for example, which we strive to concentrate and not communicate, which creates differences. Just look at the wealth that Atapuerca has generated, yet sometimes the media undervalue it in comparison with those other financial assets or political or military power.

-What new discoveries do you think will come to light in future excavations?

-More, a lot more. At present digging is proceeding in the top part of the Elephant Pit. I am certain Neanderthals will appear, that's for sure. In the Blind Cave (Cueva Ciega), everything - Neanderthals and moderns; Blind Cave may well be very productive. Bear Claw (Zarpazos) and the open-air sites will yield things and I want to see them, so I have to look after myself.

-What has Atapuerca meant for your life?

-A lot, an absolutely unique fulfilment. Many projects in the course of my life have failed or could not begin, but there are two which have been fulfilled. One has been the recovery of more than 9000 stolen zoological drawings for the MNCN; and the other is Atapuerca.



purpose, the Human Evolution Museum Contents Project Study Committee has been formed in Burgos, with members including some of the world's leading figures in the field of human evolution. Its role is to analyse and provide advice on the functional aspects of the museum displays as part of the overall project. In June 2005 my Department also sponsored the declaration of the Atapuerca Cultural Space, which not only includes the sites themselves but also their environs with a view to ensuring their total protection.

tives is a specific campaign targeting hotels in Burgos and the area around Atapuerca, as well as promotion activities aimed at students from Castilla-León and surrounding Regions.

www.cenieh.es

The National Human Evolution Research Centre (CENIEH) officially inaugurated its website, www.cenieh.es, in late September 2006. The Centre's director, José María Bermúdez de Castro, explained the surfing options on this scientific website, including details of its range of research program-

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## NEANDERTHAL SKELETAL STRUCTURE AND THE PLACE OF HOMO NEANDERTHALENSIS IN EUROPEAN HOMINID PHYLOGENY

IAN TATTERSALL

> Although the debate rages on over whether the Neanderthals merit their own species status or should be viewed as an odd variant of Homo sapiens, recent evidence has accumulated that overwhelmingly supports the former interpretation. Among this evidence is a recent full-body skeletal reconstruction that not only highlights the extreme differences between the highly apomorphic H. sapiens and H. neanderthalensis in the construction of the thorax and pelvic girdle, but strongly suggests significant gait differences between the two species that add to the probability that the two kinds of hominid would not have recognized

each other as breeding partners. This is hardly surprising since the two species possessed a relatively remote common ancestry, and it is indeed suggested here that Homo neanderthalensis was merely one species embedded within a diverse and endemic middle Pleistocene European hominid radiation. (...) we can see middle Pleistocene Europe as the setting for a great deal of evolutionary experimentation by hominids subsequent to Ceprano and Atapuerca Gran Dolina times, with numerous incursions, species originations, and extinctions. It appears that H. neanderthalensis was simply the last-surviving member of a com-

plex radiation (or set of radiations) by hominids subsequent to the first successful hominid colonization of Europe. As an individuated historic entity, H. neanderthalensis would have found itself in competition with H. sapiens for the same set of environmental resources when the latter first started to trickle into Europe at about 40 kyr ago. And whatever the Human Evolution exact nature of the interaction between the two species, it seems that the rapid (12 kyr overall, shorter on local scales) disappearance of Neanderthal morphology from the record was due to competitive exclusion of some kind rather than to absorption and "genetic swamping."

city around the world, with investment for the 2004-2006 period totalling 3,463,194 g. This program includes infrastructure improvements at the site, assistance with the excavation work, publicity for the Atapuerca treasures, raising the public's appreciation of the discoveries, road access improvements, signposting to help Atapuerca visitors, etc.

On the cultural front, our aim is to increase the projection of the sites in Burgos city as part of a cultural and scientific project spanning the construction of both the Human Evolution Museum and the National Research Centre, aimed at turning the sites and these new centres into a common unit.

On the tourist front, Atapuerca is one of the most important world heritage-related tourist drawcards in this region, and indeed its promotion of the cultural and tourism resources as one of the main thrusts of economic development in our region is an example to follow in. During the current legislative period, the Culture and Tourism Department has included Atapuerca in the list of major tourist attractions in Castilla-León, along with the other great World Heritage sites in our region, with a view to making Atapuerca a high-quality tourist destination, clearly in demand by the growing number of visitors to Castilla-León. In this area we are in the process of shaping an cultural tourism

mes, the latest news about the centre, information on grants and jobs, etc. The website is in both Spanish and English, and will soon be in other languages as well.

EMILIANO AGUIRRE, DIRECTOR DE ATAPUERCA 1977-1990

"Knowledge is enriching, and it is different from money because it strives for communication, not concentration"

Emiliano Aguirre Enriquez (Ferrol, La Coruña 1925), Professor of Palaeontology at the Complutense University (Madrid), is the original author of the Atapuerca Research Project, which he headed for 13 years. In 1985 he was appointed as acting director of

doctrine of evolution in Spain. That's how they described us!

Priests were involved in the issue at the time and also in the years beforehand. At the start of the last century they included the French Abbot Breuil and H. Obermaier, a German. There was also Father Carballo and Gonzalo Viñés, who stood out with the discovery of the Neanderthal remains in Cova Negra (Játiva, Valencia).

-What references drew you to Atapuerca?

-Miguel Crusafont spoke to me about Atapuerca in the 1960's, but it was only in 1976 when Trinidad Torres brought me some teeth, four pieces of a jawbone and two fragments of a human skull from the Bones Pit. On se-