

NEWS FROM ATAPUERCA IN ENGLISH



> **Orchid Valley datings point to 30,000 BP**
ATAPUERCA HILLS CONTAIN EVERY ARCHAEOLOGICAL PERIOD FROM THE LAST MILLION YEARS
 > **Neanderthals and also Cro-Magnons lived in Iberia at the time**

A team from the Agricultural Chemistry Department at the Autónoma University of Madrid has dated natural quartz crystals found near the prehistoric tools at the Orchid Valley site. The date yielded by the research, 30,000 BP (Before Present), sets the human occupation of this site in the Upper Palaeolithic, specifically at the beginning of the first known evidence in Europe of Cro-Magnon groups, a period which was previously undocumented in the Atapuerca Hills. It can be positioned between the records found in the Bear Claw Cavity (a little over 100,000 years old) and the discoveries at the base of the Lookout Cave (close to 6,000 years old).

>The Orchid Valley is an open-air site in the Atapuerca municipality. It is currently under military jurisdiction, and got its name on account of the abundance of these wildflowers. It is really an idyllic setting, on the edge of a platform with commanding views across the Pico River valley.

>The area contains various sinkholes where rainwater probably formed pools on many occasions, and natural outcrops of cretaceous flint that was extremely useful for shaping stone tools. The hunter-gatherer societies in that time settled on a limestone lapies that was slowly covered by dissolving clay in an oxidising environment that has prevented the recovery of bone or organ remains that might have been there, so that only their stone tools have survived down to the present.

>Barely a couple of days into the year 2000 digging campaign, Eudald Carbonell announced a great discovery to us. On one of his walks through the Hills, he had discovered two dozen cretaceous flint tools and a burnt quartzite edge near Alto de Matagrande. The site had been familiar to Carbonell for about six years, but the evidence at the place had suddenly changed when several Army tanks rumbled through and skidded while on manoeuvres. What had been just four artefacts in 1984 were now an abundance of tools. The Army Base in Castrillo del Val was informed immediately, and Lieutenant Colonel Aymerich gave his troops two orders: to stake out and rope off the place and to prohibit any military personnel from entering the area with vehicles along the track that crossed through the middle of the site.

That same year and the next, in 2001, Carbonell, Bermúdez de Castro and a small team of experts excavated a 12 m² area every afternoon. The results were not particularly spectacular: it was after all just a place used as a workshop, i.e., human groups visited the Valley for good quality flint supplies, they removed the unproductive outer shells and then took away the tools and nodules that might be suitable for working. What they left behind for modern day archaeologists we-

A selection of highlights from the previous issue

re shapeless fragments, flakes and cores that only evidenced the passage of hominids at an undefined time during the Upper Palaeolithic. Some of the reworked items in quartz, flint and quartzite permitted the hypothesis that they had set up seasonal camps, possibly attracted by the sinkholes in the zone and the presumable herds of herbivores. Furthermore, given that the geographic burial process must have been slow, there might even have been several human occupations from various periods that had been mixed up.

Prospecting in the environs enabled us to appreciate the large size of the human occupation areas. So in 2001, a one square metre sample was opened about 15 metres away on the slope of the Valley. This led to the discovery that a considerable part of the archaeological material had slid downhill with a large package of clay that contained many dispersed prehistoric objects without any relationship between each other. The group then decided to stop digging until they could set a dating that would help to decide how important the site really was.

Now a team led by Millán and Beneitez using the thermoluminescence method at the Autónoma University of Madrid Laboratory has yielded a date that will enable us to continue work on the basis of a new hypothesis. The age of the site is established at 30,000 BP, and it means that we can now verify whether these are really products from the Middle Palaeolithic or tools manufactured in the Upper Palaeolithic. At the time, three modes of object treatment coexisted on the Iberian Peninsula: Châtelperronian, Aurignacian and Mousterian (named after three French sites, Châtelperron, Aurignac and Le Moustier). The first two are from the Upper Palaeolithic and the third from the Middle Palaeolithic, the first and third apparently the product of Neanderthal groups and the second of Cro-Magnons.

>We therefore do not know the exact identity of the hominids who settled in Orchid Valley to hew flint and possibly hunt, which opens up exciting prospects for those who are struggling to explain how the transition from the Middle to Upper Palaeolithic happened, and whether the authors of the range of tools were Neanderthals or Cro-Magnons. The site enables us to span a key period which has hitherto eluded us in the caves we have explored.

Neither the end of the Middle Palaeolithic nor the Upper Palaeolithic have been discovered yet, although we are still hopeful that either The Lookout or Main Cave will yield levels from these periods.

NO PCI (PROPERTY OF CULTURAL IMPORTANCE)

>The Orchid Valley lies outside the area declared to be a Property of Cultural Importance by the Castilla and León Regional Government, and is therefore also outside the area catalogued by UNESCO as a World's Heritage Site (only a 2.5 km long by 0.5 km wide area is actually included, when the total Atapuerca Hills area covers 11.62 square kilometres). The site, like the others detected in its immediate environs, lends further weight to the unanimous demand that all of the Hills require the maximum possible level of protection by the Regional Government.

>PALAEOLOGY, WHAT USE IS THAT?

>JAN VAN DER MADE. Palaeontol-



logist. National Museum of Natural Sciences. Member of the ARG.

>I have been asked the same question on innumerable occasions. And I am not surprised. We palaeontologists always appear on the news with "the greatest...": the biggest dinosaur, the biggest mouse, the smallest pygmy elephant, the oldest bird, etc. We all seem to be competing to appear in the Guinness Book of Records.

>Palaeontology is useful for many things, and I am not just thinking that it can be helpful to estimate the age of remains that have been discovered at Atapuerca, although it certainly is useful for that. I am thinking about things that are more closely related to the

began with the extinction of the large mammal and birds 150,000 years ago, following the dispersal of our species all over the world. Initially, these extinctions were caused by hunting, but later they were due to changes that we made to the environment, the domestication of plants and animals, and now because of industrialization and the large-scale exploitation of natural resources.

>As well as providing information and interpretations concerning the study of climate changes (and its effects on the flora and fauna), evolution and the relationship between humans and the surrounding flora and fauna, Palaeontology has also been quite in-



issues that appear every day in the media like climate change and genetically modified organisms.

>Possibly the first time that people thought that the climate could change was in the mid-18th century after the discovery of rhino and hippopotamus remains in Étampes, France, although the encyclopaedist Voltaire was sceptical. The bones described by Cuvier and other palaeontologists at the start of the 19th century were absolutely essential to the conception and acceptance of the theory of evolution. In the second part of the 20th century there was a growing notion that we were causing the extinction of numerous organisms, but it was Palaeontology which brought to light the fact that this process

fluent in the way we regard ourselves in our relationship with the world around us, which is quite a lot closer than what some philosophers and theologians would have us believe.

>The domestication of animals and plants has probably been extremely beneficial for us, but it has been much more destructive for the flora and fauna where these domestic breeds of animals and plants have been introduced. Now we are facing another intervention that is even more drastic than domestication, and we cannot afford to make mistakes. Palaeontology and archaeology can help us to avoid the repetition of historic (or, to be more accurate, prehistoric) mistakes.

>It might seem that Atapuerca and its human remains from 400-800,000 years ago is a long way from the environmental changes produced by humans and domestication. Even the scientists who tried to explain the presence of rhinos in France more than two hundred years ago had the idea that they would be devoting their lives to an academic field with no practical consequences. Yet that was the beginning of a line of knowledge that has led to us driving cars with catalysers in the exhaust pipe. Darwin did not envisage that today, the theory of evolution would help studies trying to protect us from certain illnesses. Armed with our current knowledge of history, you don't need to be a soothsayer to realise that research like what is going on at Atapuerca is providing general knowledge which, at some point in the future, will help politicians to make transcendental decisions. The fact that along the way, these studies satisfy the curiosity aroused in so many people about our ancestors and the environment they lived in is more direct, but certainly no less important.

CAROLINA MALLOL DEFENDS ATAPUERCA THESIS AT HARVARD

>Carolina Mallol presented her thesis at the Anthropology Department of Harvard University (Boston, USA), entitled Micromorphological Observations of archaeological sediments in Ubeidiya (Israel), Dmanisi (Georgia) and Gran Dolina TD-10 (Spain) for the reconstruction of the contexts of hominid occupations. The work, supervised by Professor Ofer Bar-Yosef, was awarded the highest grading by the tribunal.

The analysis of sediments provides access to palaeo-environmental data, the origins of the deposits and the natural and cultural processes that went on there.

The Barcelona researcher characterises the Ubeidiya site, dated at almost 1.5 MBP (million years before present), as having formed on a fluvio-lake edge, while for Dmanisi, from 1.8 MBP, suggests the existence of several episodes of volcanic activity, with rapid sedimentation of the human occupation levels. The sediment at Level 10 in Gran Dolina, from 0.35 MBP, formed in low-energy hydrological processes. Several of the human occupations took place at times when there was no water activity, and are therefore archaeological levels that have scarcely been altered. The identification of cryoturbation disturbances suggested to Mallol that the hominids lived in the cave in a period during which the climate was quite cold.

Carolina Mallol wrote her Honours paper on the subject of raw materials in Gran Dolina, including the location of food sources and technological treatment, and now she is involved in several projects at Harvard University including the excavation and analysis of the Galeria Pesada site in Portugal.

PALAEOLOGICAL TECHNOLOGY IN SOUTHERN EUROPE, NEW DISSEMINATION PRESENTED AT BURGOS UNIVERSITY

>On 3 February, BSc Marcos Terradillos Bernal defended his Research Accession paper at the Humanities and Education Faculty, entitled Contribution to knowledge of Early Palaeolithic technology in Southern Europe through the examples of Gran Dolina TD6, Vallonnet, Ca' Belvedere in Monte Poggiolo, Barranco León and Fuente Nueva 3.

This young scientist's work pro-

poses that the first hominids to occupy Southern Europe practiced very simple stoneworking which was fundamentally aimed at generating large amounts of flakes for their edges. In his opinion, at these sites they practiced a wide variety of activities related to stone tool production and meat and forest resources.

The tribunal, composed of José María Bermúdez de Castro, co-director of the Atapuerca excavations, Juan José García González and José Antonio Fernández Flórez, awarded Terradillos the highest possible rating for a candidature.

UBU PALAEOLOGY AREA TO RECONSTRUCT HOMO HEIDELBERGENSIS

>The Palaeontology Area of the Burgos University has begun a project that will produce a virtual reconstruction of the bodies of the hominids that roamed the Atapuerca Hills 400,000 years ago. The large numbers of human bones discovered in the Bones Pit will facilitate this research and advance our current understanding of their body proportions, complexion, weight and stature, explains José Miguel Carretero, head of the group. This virtual reconstruction will also enable us to know how Homo heidelbergensis moved and compare it with the way the modern Homo sapiens moves.

In addition, a collaboration agreement with the General Yagüe Hospital will permit, for the first time in Burgos, the production of X-rays and Computerised Axial tomography (CAT) of bones for the purpose of improving our understanding of their internal structures, permitting their 3D reconstruction and advancing our knowledge of age-derived ailments.

>60,000 Euro per year for 10 years. IBERDROLA, NEW ATAPUERCA FOUNDATION SPONSOR

>In March 2004, Iberdrola subscribed to the protocol with the Atapuerca Foundation that identifies the company as a Founding Sponsor. The document was signed by Ignacio Galán, Deputy Chairman and Managing Director of Iberdrola, and Pedro García Romera, Chairman of the Foundation. This agreement is part of the Atapuerca Business Programme that the Foundation set up to channel various types of sponsorship, amongst which is the designation as Founding Companies for organisations that subscribe a commitment to provide 60,102 Euros per year over a ten year period (601,020 Euros in all). For several years, Iberdrola has given proof of its support for the Atapuerca project in the form of research grants at Burgos University for students completing their PhDs on issues relating to Atapuerca. It has also provided help on logistical tasks during the excavations and has contributed actively to publicity for the research work.

>TENERIFE HOSTS FIRST EDUCATIONAL EXHIBITION OF THE FOUNDATION

>"The Atapuerca Hills, journey back to our origins". April 15 marked the opening in Tenerife of the first exhibition in the Canary Islands organised by the Atapuerca Foundation in collaboration with the ARG under an agreement sponsored by Caja Canarias. The show, open until 30 June at the exhibition hall in the Santa Cruz de Tenerife offices of Caja Canarias, includes educational material, lectures and supplementary activities, thanks to which the Foundation hopes to expand public understanding of the discoveries in the Hills.