

>NEWS FROM ATAPUERCA IN ENGLISH



>**26th EXCAVATION SEASON**
2003 campaign highlight:
new 800,000 BP hominids

>**HOMO ANTECESSOR JAWBONE, KNEECAP AND PARIETAL UNEARTHED IN AURORA STRATUM (GRAN DOLINA)**
 >**WESTERN EUROPE'S OLDEST STONE TOOLS FOUND AT BASE OF ELEPHANT PIT**
 >**Aurora Stratum bones permit analysis of evolutionary link to Bones Pit**
 >**Construction delays in Human Evolution Museum increasingly unjustified, claim scientists**

>The night of 21 July will be remembered forever in the history of Atapuerca's great discoveries. At the start of the digging season, Carbonell decided that the excavation area at Level 6 in Gran Dolina had to be enlarged. There was a risk of rockfalls in several layers of poorly consolidated soil, and there were various members of the scientific community who still questioned the position of the Atapuerca hominids in the human evolutionary tree because the most important Homo antecessor discoveries had been individuals that had died before adulthood.

Since 1994, our team knew that Level 6 contained a large number of human remains that had been consumed by their fellows, and that they belonged to a biological population with no other evidence in Europe apart from a single skull from Ceperano (central Italy). The discovery of new fossils was thus a scientific necessity.

>**STORY OF A DISCOVERY**

The Aurora Stratum could only be dug when it would not interfere with the work going on above, at Level 10, otherwise loose rocks and stones would probably injure those working below. A team of two began to dig a 2 m² area at 6 PM: Dr. Jordi Rosell, more familiar than anyone with the Aurora Stratum (he worked on the 1994 dig), and Jaume Guiu, archaeologist, furniture restorer, sculptor and peerless wielder of the fine tools needed to prize delicate items out of the clay. They were accompanied by restorer Aida Alarcos and there was always a geologist, a photographer and an assistant on hand, ready for any eventuality.

For several days, the team had unearthed stone tools and herbivore bones, mainly from cervids. These

A selection of highlights from the previous issue

would help to complete our understanding of the technology and the ecosystem of hominids 800,000 years ago, but the climax was only reached on the evening of 20 July. It was 7 PM when Rosell, a leading zoo-archaeologist and expert in carnivore and herbivore anatomy, watched as a rounded bone with an extremely spongy surface appeared. It was the kneecap of a young hominid, which had to be eased out with great care. This was just the start of a cascade of discoveries. First a rounded bone - there was no doubt it was part of a human skull. It turned out to be a parietal - the bone above our ears on either side of the face, possibly from a child who was slightly older than the source of the kneecap. Not long after returning to the site from dinner at Los Claveles restaurant, Jaume exclaimed, "Hey kids, there's a guy coming out here!" It was a human jawbone! Detailed analysis will help us to determine its relationship with Homo antecessor. Such spectacular, meticulous care had to be taken to bring out these bones in a perfect state that it was only at 5 mm the next morning when they could actually hold all three new human fossils in their hands. For Jordi, Jaume and Aida, the night had just begun, but they were not going to sleep as easily as they had the day before.

>**HOMO ANTECESSOR PUZZLE COMPLETED WITH NEW PIECES**

>The discovery of a jawbone, a kneecap and a parietal bone in the Aurora Stratum in Gran Dolina will help to complete the skeleton puzzle begun in 1994 and open the way to new studies into the evolutionary position of these hominids.

The parietal bone will probably facilitate a more accurate estimation of the skull size, currently judged to be a little over 1,000 cc. If this bone proves to be from "Dolina Boy", the calculation will be all the more effective.

The discovery of the kneecap is striking because this bone is unusual in the fossil record, yet it happens to be the third such kneecap found in TD6. A detailed study of the muscle insertions will help to discover the degree of mobility of these hunter-gatherers.

Until restoration work begins, we will not know whether the jawbone contains teeth. This is the second jawbone discovered here, and it will help to determine whether the similarities with jawbones from the Bones Pit imply an evolutionary relationship or a simple convergence.



TD 10 yields thousands of archaeological records SPECTACULAR

>The most appropriate description for the massive carpet of bones and tools that covered the campsite installed in the upper part of Gran Dolina by H. heidelbergensis 350,000 years ago.

Excavation in TD10 continued for two more months in order to make further progress on this dense layer. In some of the grid squares, coordinates

of the past, whether it be distant or close to us. However, contrary to appearances and popular belief, it is not a discipline that is unrelated to our society or our current interests. It is true that many specialists tend to regard their work as their own, and try to prevent anybody from meddling in their affairs. Such researchers are isolated from society, and their attitude is totally contrary to what we have proposed from the outset at Ata-

need to monitor gas emissions that are having obvious environmental effects.

What do archaeologists have to say about the very popular idea that technology is dehumanising us? In order to speak with authority on this subject, we have to analyse the historic development of technology, not just over the last few centuries but since the origins of the human race 2.5 million years ago. The first tools enabled them to dismember animals such as large herbivores (elephants, rhinos, hippopotami, etc.) which would otherwise have been impossible. Eating proteins helps our brains to grow, and the capture of large prey meant that larger populations could be fed. The production of tools and their use to build shelters and clothes facilitated human access to parts of the planet which would otherwise have been out



of the mysteries guarded jealously in the bowels of the Atapuerca Hills.

>This time, the Bones Pit has yielded 260 human fossils from the species H. heidelbergensis, more than the entire record of the species discovered to date in the whole of Europe. Amongst all of this material, one of the most outstanding pieces was a humerus fragment. Put together with another fragment found in 1984, it is the world's first discovery of a complete adult humerus from a pre-Neanderthal species. This provides further support for an idea that the Atapuerca researchers have been toying with for some time: that the skeletons were complete when they entered the Bones Pit. This humerus, along with other complete items such as a cubit, will enable the Homo heidelbergensis height and weight to be defined more accurately, along with further explanations for the powerful complexion of these individuals.

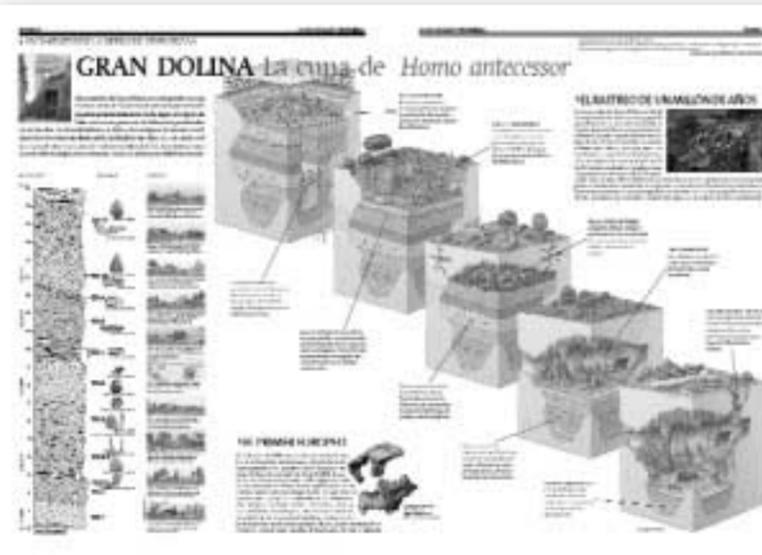
Further proof of the excellent conservation state of this recondite site is the discovery of several tiny bones from inside the human ear, added to the list of the ones found several years ago. These bones, the hammer, anvil and stirrup, are part of the mechanism that converts sound waves, and they are the only specimens in the world's fossil record.

>**ELEPHANT PIT**

>Once again, this site has lived up to the great expectations of our researchers. At the low levels, dated at around 1.3 million years, we found five flint flakes associated with horns, teeth and bones of large vertebrates, which proves that the Atapuerca Hills were already occupied at the time. In the near future, this may well lead us to revise the date of the earliest occupation of the continent. Industrial items were also found in the intermediate levels, which has raised hopes that the Elephant Pit may turn out to be a monumental site like Gran Dolina from an even earlier age.

>**OTHER RESULTS CLAW MARK CAVITY**

>This small cavity has yielded a number of new surprises this summer.



for over 1,000 items were recorded. This made very slow progress the most prominent feature of the team's work here.

The tools were made from several types of flint, quartzite, quartz and sandstone that were chosen from amongst material around the site. Shaping and fitting was done at the site itself, and the items were used to dismember and deflesh animals, as well as for hide treatment, weapon production and consumption of plant matter.

Experts have identified bones from several types of deer and horse species as well as rhinoceros fossils. Carnivores such as wolves and foxes came to scavenge the offal left behind, but some of them must have been hunted themselves or used by humans, judging from the cut marks on their bones.

EDITORIAL >THE SOCIAL ROLE OF ARCHAEOLOGY
Robert Sala. Prehistory Lecturer, Rovira i Virgili University, ARG member

Archaeology is a scientific discipline with clear goals in the reconstruc-

tion of human evolution poses a number of questions about the past which are important in the education of our students and the moulding of social criteria that are more in touch with our times and the problems that concern us all. One of the most passionately debated issues is undoubtedly climate change and its influence by humans. The main problem that has constantly afflicted this issue has been the lack of temperature data and other records with a sufficiently broad and complete base. The historic record of the Middle Ages shows that global warming took place in the 10th century, which obviously had no relation to the growth of industry. If we go further back to the Pleistocene times recorded at sites like Atapuerca, we find that climate change was a natural global phenomenon on our planet and that the evolution of our forebears was clearly marked by it. We cannot propose that it is something utterly new, although there is a clear

of bounds. Finally, the recent use of medicine has given us a standard of living unknown at any other time in our evolution. Science, technology has humanised, not dehumanised us.

One final topic I would like to mention is the issue of population movements. Right now there are population flows out of poor areas, and we regard them as extremely large-scale movements. In the past, however, there were mass migrations of entire populations in and out of different parts of the planet. Interaction between different cultures and forms of human behaviour has produced growth and improvements in the living standards of our peoples.

>**HUMAN PRESENCE IN EUROPE 1.3 M BP CONFIRMED BY NEW EVIDENCE FROM ELEPHANT PIT**
 >**BONES PIT YIELDS 260 H. HEIDELBERGENSIS REMAINS, INCLUDING A HUMERUS FRAGMENT**

>Over 50 researchers from various universities and nations struggle for two months to untangle some

Our experts dug for a month at a level dated at roughly 250,000 BP. The site was chosen by several bears for their hibernation, but it was also frequented by other carnivores and received sporadic visits by human groups.

The most interesting find was the discovery of several holes drilled by plant matter, possibly roots. They were covered by sediment, the plant matter rotted and the result has been the conservation of the original shape of the plant. This is what is known as "pseudomorphs". We have also recovered many fragments of a fruit from the Pistacea family (mastic tree, pistachio, etc.), which may have been left there by the human groups that visited the cave. Several deer, horse and cattle species were once again the main types that were identified.

LOOKOUT. Sampling work begun in 1999 was renewed in Lookout Cave. This season we were able to dig down 70 cm, and we can now see that the Neolithic sequence extends to a depth of 3.5 metres. The stratigraphy of the Lookout Cave makes it one of the most important Neolithic sites in inland Iberia. The material that has been unearthed continues to consist of items from the human presence in the cave, including numerous pieces of ceramics, domestic fauna, the stone industry and even charcoal.

MAIN CAVE. After receiving confirmation that some of the paintings were from the start of the Bronze Age, our experts continued to trace both the paintings and the wall engravings that were left pending from previous years in Flint Gallery. Meanwhile, excavation at the cave entrance known as Portalón (The Porch) continued with the necessary clearing work on the intermingled levels for the fourth consecutive year.

>**WWW.ATAPUERCA.COM A REFERENCE POINT FOR WORLD PREHISTORY**

>The Mahou-San Miquel Group, in collaboration with Burgos University and members of the Atapuerca Research Group, proposes to relaunch its web site, www.atapuerca.com. The new site is divided into various sections, ranging from a general section that provides information about the major milestones in the story of humanity to a specific area about Atapuerca that contains the latest news from the sites and the research centres, as well as general information. The page will soon be available in English as well. It also has a section containing games, animations and competitions that make browsing fun for all.