Study places Homo sapiens in Europe earlier than thought
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Some of the manmade fossils discovered in the cave which led to the archaeological findings.

Homo sapiens ventured into Neanderthal territory in Europe much earlier than previously thought, according to an archaeological study published in Science Advances on Wednesday.

Up to now, archaeological discoveries had indicated that Neanderthals disappeared from the European continent about 40,000 years ago, shortly after the arrival of their "cousin" Homo sapiens, barely 5,000 years earlier and there was no evidence of an encounter between these two groups.

The new discovery, by a team of archaeologists and palaeoanthropologists led by Ludovic Slimak of Toulouse University, pushes back the arrival of Homo sapiens in Western Europe to around 54,000 years ago.

Another remarkable finding of the research is that the two types of humans alternated in inhabiting the Mandrin cave in what is now the Rhone region of southern France.

The Mandrin site, first excavated in 1990, includes layer upon layer of archaeological remains dating back over 80,000 years.

"Mandrin is like a kind of neandertalian Pompeii, without catastrophic events, but with continuous filling of sands in the cave deposited progressively by a strong wind, the Mistral," Slimak told AFP.

His team uncovered a layer, known as the "E layer", containing at least 1,500 cut flint points, more finely executed than the points and blades in the layers above and below.

Very small in size, some of them less than a centimetre in length, these points "are standardised, to the nearest millimetre, something we haven't seen at all with Neanderthals," said Slimak, a specialist in Neanderthal societies.

These, he explained, were probably arrowheads, unknown in Europe at that time.

He attributes this production to a culture called Neronian, linked to several sites in the Rhone area.

Milk tooth discovery

In 2016, Slimak and his team visited the Peabody Museum in Harvard to compare their discoveries with a collection of carved fossils from the Ksar Akil site at the foot of Mount Lebanon, one of the major sites of the expansion of Homo sapiens to the east of the Mediterranean.

The similarity between the techniques used convinced Slimak that the findings at the Mandrin site were the first traces of Home Sapiens found in Europe.
A milk tooth found in the "E layer" confirmed his suspicions.

Archaeologists and palaeoanthropologists led by Ludovic Slimak inside the Mandrin cave.

In all researchers found nine teeth at the Mandrin cave site, belonging to six individuals.

These ancient teeth were entrusted to Clement Zanolli, a palaeoanthropologist at the University of Bordeaux.

Using microtomography, similar to medical scanning technology, the verdict was clear.

The milk tooth from the "E" layer was the only modern human tooth found at the site.

That "fossil molar from a modern human child provides the earliest known evidence of modern humans in western Europe", the Natural History Museum in London said in a statement.

Co-existence?

The archaeological team then used a pioneering technique, fulginochronology, which analyses layers of soot impregnating the walls of a cave and the traces of ancient fires.

The researchers demonstrated that "this Modern human population occupied this Rhone territory for some 40 years," said Slimak.

At some point, the two populations either co-existed in the cave or on the same territory, the researcher concluded.

He imagines that Neanderthals could have served as guides to Homo Sapiens to lead him to the best sources of flint available, some of which were located up to 90 kilometres (55 miles away.

"Nothing new under the sun... This is precisely what happened when Europeans began the colonization of the Americas or Australia," he noted.

"The findings from Mandrin are really exciting and are another piece in the puzzle of how and when modern humans arrived in Europe," concludes Professor Chris Stringer, co-author of the study and a specialist in human evolution at the Natural History Museum in London.

"Understanding more about the overlap between modern humans and other hominins in Eurasia is vital to understanding more about their interactions, and how we became the last remaining human species," he added.

This overlap, which was evident in Mandrin, now places the Rhone region as a "major migration corridor (for Homo sapiens) enabling them to reach the Mediterranean and continental European areas", said Slimak, who promises more discoveries from the Mandrin site.

More information: Ludovic Slimak et al, Modern human incursion into Neanderthal territories 54,000 years ago at Mandrin, France, Science Advances