

## Ludovic Slimak

In February, archaeologists published evidence suggesting that *Homo sapiens* arrived in Europe around 54,000 years ago, some 10,000 years earlier than previously thought (L. Slimak *et al. Sci. Adv.* 8, eabj9496; 2022). Researchers excavating the Grotte Mandrin rock shelter in France's Rhône Valley say their findings are helping to rewrite our understanding of how *H. sapiens* colonized the continent, and *H. sapiens'* relationships with Neanderthals. Ludovic Slimak, the leader of the team that has worked at the site for more than three decades, gives his take on the significance of the discoveries at Grotte Mandrin and the special role archaeology has in France.

### What is so special about Grotte Mandrin?

The rock shelter faces north, so stone artefacts and animal bones left in it were quickly covered by silt and sand, blown down the Rhône Valley by a strong wind. We have excavated 12 very well-preserved layers of sediment, dating from more than 100,000 years ago to about 42,000 years ago. In them, we have found artefacts of very different cultural traditions and technologies. Grotte Mandrin gives archaeologists the same sort of insight that the Pompeii volcanic explosion gave on Roman society — without the volcano.

### Could you describe some of the most important finds from the site?

We have found 60,000 stone tools, 70,000 animal bones and 9 hominin teeth. Most of the artefacts are similar to those from other Neanderthal sites. However, as we suggested some years ago, we think that the many sharp, small tools called points, found in a layer dating from between 56,800 and 51,700 years ago, were made by *H. sapiens*, because of their similarity to those known to have been made by *H. sapiens* at a site in Lebanon. And when palaeoanthropologist Clement Zanolli at the University of Bordeaux analysed the teeth, he found that one discovered in the same layer as the points was from a *H. sapiens*.

### What is the significance of your findings?

These findings suggest that *H. sapiens* was in Europe 10,000 years earlier than we previously thought, on the basis of evidence dating back 44,000 years from



Archaeologist Ludovic Slimak's excavations could change our understanding of how *Homo sapiens* colonized Europe.

Bulgaria (M. Hajdinjak *et al. Nature* 592, 253–257; 2021). We think the *H. sapiens* at Mandrin stayed for only about 40 years, and, from soot-deposit analysis, they arrived just one year after the previous Neanderthals. They used the same distant flint sources, suggesting they had Neanderthal guides who passed their knowledge on to them. Others have proposed similar contacts elsewhere, but the pre-eminent view is that *H. sapiens* taught the Neanderthals — not the other way around. There is a school of thought that sees Neanderthals as inferior apemen, and another that sees them as just like us. Both are, in my view, unhelpful. We should try to understand them on their own terms. Their tools and technologies suggest they were extremely creative, more so than *H. sapiens*.

### Why have French archaeologists had such prominent roles in the field?

France played a leading part in the study of prehistory and archaeology in the twentieth century, particularly the second half of the century. In the post-war period, André Leroi-Gourhan in Paris and François Bordes in Bordeaux led the most important groups in Europe and large field schools where students came from across Europe and the United States to study archaeology.

It is a question of science but also politics. Archaeology has been used as a diplomatic

tool to represent France abroad. As a result, the field has received a lot of funding, for work both at home and in other countries. Archaeology still plays an important part in French soft power.

### What is the current state of archaeology in France?

In the 1970s and 1980s, archaeologists would start large excavations with teams of 50–100 people. Today, teams are much smaller and digs cover mostly limited areas. But we also have modern tools and techniques such as DNA analysis and soil micromorphology, which allow us to distinguish the sedimentary signatures of human activity from those of natural phenomena.

### Is French archaeology still shaped by the country's colonial past?

We don't just go to foreign countries, do our work and then go home. At the French archaeological mission in Turkey, for example, our first goal was to put in place training for local archaeologists. We have a lot of students coming from Istanbul University in Turkey to study in France, excavate and do their PhDs.

### Interview by Nic Fleming.

This interview has been edited for length and clarity.