

An archaeological rediscovery offers clues about distant human past

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UConn professor of anthropology Christian Tryon poses for a photo in his lab in Beach Hall on March 17, 2023. Credit: Sydney Herdle/UConn Photo

In their recent publication in the *Journal of Human Evolution*, UConn Department of Anthropology Professor Christian Tryon and Shara

Bailey, Director of the Center for the Study of Human Origins at New York University, detail new findings about 40,000-year-old teeth unearthed in the 1930s from a site called Ksâr 'Akil in Lebanon.

The tricky part is that these teeth are missing.

The story of how Tryon and Bailey came to study these artifacts is fascinating and includes war, loss, and chance findings which saved this information from being lost to history. The fossils were found in a rock shelter just outside of modern-day Beirut, in a region that probably saw a lot of traffic when Homo sapiens left Africa.

The evidence for this largely comes from the campsites, tools, food debris, and rare art that make up the archaeological record, but Tryon says there are very few sites where you can find a fossil and definitively say whether it was Homo sapiens or Homo neanderthalensis who actually made an archaeological site, but Ksâr 'Akil is one of those few, rare places. Some 40,000 years ago, two children were buried at Ksâr 'Akil, and on that dig in the late 1930s, they were unearthed and later lost. Tryon and Bailey are now trying to piece together as much information as they can with the few remaining records.

'Egbert's' stony bed

Tryon has focused on Ksâr 'Akil by combing through archives at Harvard's Peabody Museum for all the evidence he can find about the site.

The story of how the teeth were found starts with a group of Jesuit priests in the Holy Land who informed a group of fellow priests and archaeologists, including the Rev. J. Franklin Ewing, of a site they may find interesting.

"They were all deeply interested in the past, but they were kind of figuring things out as they went along because, in the 1930s, there was no place to get formal training in Paleolithic archaeology or [human evolution](#) at that point in the United States," Tryon says. "Some trained at Cambridge in the U.K., and Ewing had studied in Vienna."

Ewing later led the dig, which extended down an astonishing 75 feet and yielded millions of artifacts and fossils along the way, including those of anatomically modern humans. Tryon explains that these artifacts are from an important time in [human history](#) called the Upper Paleolithic:

"This is when, suddenly, something very different was going on. People were making different kinds of tools in different ways, probably living in larger and more dense groups, apparently staying in contact with groups hundreds of miles away, and using art by wearing personal ornaments like jewelry and decorating cave walls and other surfaces with red or yellow paint. It's a whole different way of life."

Because this unique site yielded so many artifacts, and because we have relatively few [human remains](#) from this period of history, Tryon explains that it has assumed almost outsized importance. Ksâr 'Akil became a key reference site since being first dug in the 1930s, in part because those 75 feet of stratified sediment rich in artifacts and fossils showed change over time in an era before the radiocarbon dating method was invented.

Yet almost nothing ended up being published about the Ksâr 'Akil artifacts that eventually made their way to collections in the United States. The human skeletal remains include those of an individual Ewing called "Egbert" and a second, unnamed individual briefly mentioned in the original, brief publication. The second individual was never mentioned again except in some unpublished correspondence and diaries, and never actually described, says Tryon.

Then, World War II erupted and Lebanon was under the control of Vichy France, which had a policy of collaboration with Nazi Germany, and was invaded by British troops as part of the Syrian-Lebanon Campaign. The archaeologists were forced to flee the conflict but before they left "Egbert" and the other human remains were encased in concrete and left buried at the site.

Ewing, on the other hand, was not as secure in his escape. Ewing left for the U.S. but traveled via the Philippines where he had previously been a teacher. While he was in the Philippines, Japanese forces invaded, and Ewing was captured and spent the rest of the war in a prisoner of war camp. When he died a little over 20 years later, it was to an illness he attributed to the difficulties of his time as a prisoner.

After the war, the concrete blocks were shipped to Harvard, says Tryon. It wasn't until 1960 that Ewing was able to publish the preliminary descriptions of what was discovered at Ksâr 'Akil, and he died before he could fully document the findings.

"Not much has ever been written about the human remains and the originals have been lost," says Tryon. "All that was left of the most famous fossil is a cast or copy, and for the shape of the skull, it's fine, but for the teeth, which we were particularly interested in, the quality of the cast is not that good."

Tryon explains that to create the cast, a reconstruction was first created using those fossil parts that remained, but that since large parts of the skull were missing, clay was used to represent some of the missing but inferred parts of the shape of the skull. Then, the mold was taken of this reproduction, from which casts of plaster or resin could be made. If any anthropologist is familiar with "Egbert," it is because of copies of this reproduction of a reconstruction. Tryon stresses that the poor quality of the cast and loss of the fossil itself represents missed opportunities and

several generations of data loss.

Fortunately, Tryon's work in the archives led him to previously unpublished photographs and X-rays of the teeth that he assumed belonged to "Egbert." Tryon shared the findings with Bailey, who realized that was not the case.

"I know my stone tools, but I'm no expert on teeth," Tryon says. "I thought they were all just a bunch of photographs of different views of Egbert's teeth, but they were subtly different enough that she could tell they were not the same individual. There were two different individuals shown in these photos. It was right then that I knew we'd found the other eight-year-old that had been mentioned in a single sentence in that first publication. Given that there are only a handful of human fossils from Upper Paleolithic sites in the Mediterranean region, I knew we had something exciting. I mean, all we have now are photographs, but what else can you do but get everything you can out of them? We don't have anything else."

Knowing what to look for

To anyone unfamiliar with Ksâr 'Akil, coming across photographs and X-rays in the archives may seem random or unremarkable, but Tryon knows what to keep an eye out for, and it has helped him trace the thread of details from this unique site.

After the war, Ewing taught at Fordham College in New York, and the dig resumed in Lebanon. Tryon found correspondence from the priests, most of them trying to secure money for the dig from various people, including a Harvard professor named Hallam Movius Jr., to whom they shipped the human remains after the war.

"I think that when Ewing died, his stuff went to Movius and part of the

reason nobody's really discussed them is that it was Ewing's stuff, but it is now inside Movius's personal archive," Tryon says. "A search for 'Ewing' wouldn't turn up much in the hunt. In this case, the archivists discovered and documented the photographs when they went through and organized things in the Movius archives. My act of discovery happened once I came across the photos and was more about recognizing their significance, knowing what to do with that information, and finding the right person to work with."

While studying the archives, Tryon says it feels like he's had a glimpse into the lives of the researchers who came before him.

"One of the people who dug a site other than Ksar 'Akil but around the same time was sadly known to have had problems with alcohol, but I came to appreciate this in a very direct and very sad way because the archives included some pretty monstrous bar tabs," he says. "Sometimes you dig up these weird personal things, things that I kind of wish I didn't know about, but it's a very graphic example of the lives of these people working in the same field almost 100 years ago. I can get a real sense of their personalities through their private correspondence and notes as well.

"Ewing frequently wrote to Father Doherty who directed a lot of the excavation. Doherty basically made his own newsletter called 'Oriental 'Orizons,' which is itself a nice little pun on 'orison,' or prayer, and 'horizon,' or archaeological level. It's like a zine for the site, but nobody was there but him, so it pretty much had a readership of one. And as you read it, you can tell he is going stir-crazy after months at the excavation. Most of the issues start with something like 'Same dig, different day,' or 'Another day in the pit'; one tagline is 'a policy of crossed fingers will forestall the blues.' It's chatty, gossipy, hilarious, and full of little observations about daily life, like his fascination with one of his workers who is trying to date this other worker's daughter but not getting

anywhere. By the end, he starts to get worn out by visitors, and he's tired of having to put on a dog and pony show. I definitely get a sense of their personalities."

Be on the lookout

Tryon did not expect to find pictures of the forgotten remains from Ksâr 'Akil, which had essentially become a footnote lost to history. Through his and Bailey's work, however, they can confirm the remains are Homo sapiens and they can confirm the original age estimate that both are 8-year-old children.

"There are also some weird details on the lower first permanent molar teeth, which have an unusual number of cusps or ridges on them. Does it mean anything? It's unclear, because we have so little else to compare it to from this time period, but having five rather than four of these cusps is very rare in any living or fossil population. But it's present in two eight-year-olds buried side by side at the same time 40,000 years ago. It may just be an unusual family trait shared between both of the children, maybe because they were twins. We don't know. But it's certainly the kind of feature that people interested in tracing population movements have in the past used as a kind of marker or signal to connect the dots between groups."

There are other human remains from Ksâr 'Akil as well. They include an isolated tooth, and another specimen nicknamed "Ethelrud" that is a portion of the upper mouth bone called the maxilla, says Tryon.

"It has no teeth in it. It's about as uninformative as you could possibly get but still say it's human. Like so many other specimens from this site, it was lost. But luckily it was re-found by a team in Lebanon a few years ago. It's the fact that so many of these specimens have gone missing that makes the photos we found become important, because there's just

nothing else."

Any new details from the Upper Paleolithic and the people living then can build on our understanding of this time and the significant shifts that occurred for our species at the same time as Neanderthals and other extinct relatives disappeared.

"The appearance of the Upper Paleolithic in many parts of the world doesn't seem to be a gradual thing," Tryon says. "The evidence is certainly consistent with some new ways of doing things showing up fast in many parts of the world. For instance, something like the internet took a long time to develop, but once it appeared we all adopted it quickly. Whatever the Upper Paleolithic represents in terms of things or behaviors, these ideas and the stuff that went with them were popular and spread quickly across much of Eurasia, for whatever reason. And at least for Ksâr 'Akil, we know these changes coincided with the appearance of people like us. The Upper Paleolithic is a major turning point in human evolution and that is why these fossils are important."

More information: Shara E. Bailey et al, The dentition of the Early Upper Paleolithic hominins from Ksâr 'Akil, Lebanon, *Journal of Human Evolution* (2023). [DOI: 10.1016/j.jhevol.2022.103323](https://doi.org/10.1016/j.jhevol.2022.103323)

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