CRACKING THE WORLD'S OLDEST COLD CASE

Using all the information scientists know about the extraordinary Copper Age mummy Ötzi the Iceman, a police detective assembled a detailed picture of his murder.

For more than 5,000 years, the victim's body would be frozen on the spot where he died, trapped in a glacier. But after warming global temperatures began melting the iceberg, two hikers found the well-preserved corpse in 1991, launching the incredible story of Ötzi the Iceman.

Though there are other mummies as old as Ötzi, most were ritually prepared, with the organs removed and preservative chemicals applied. Many were also buried in desert climates, where the hot, dry conditions caused extensive damage. Ötzi, on the other hand, was frozen right where he died, and the humid climate kept his organs and skin relatively intact over thousands of years.

"When I was first contacted with the idea, I thought it was too difficult, too much time has passed," Detective Inspector Alexander Horn of the Munich Police Department told the New York Times of the call he received from the South Tyrol Museum of Archaeology in Bolzano, Italy. (Ötzi has been in cold storage at the museum for the past 25 years.) "But actually, he's in better condition than recent homicide victims I've worked on who have been found out in the open."

Horn, who is known for his profiling skills, was asked to tackle the extremely cold case of determining just what exactly happened on the day Ötzi died. A decade after his corpse was discovered, an X-ray of the body revealed a flint arrowhead buried in his back. But at the time, scientists didn't have enough information to figure out much more than that about what killed him.

That was then—this is now. With highly advanced techniques at their disposal, such as archaeobotany and paleometallurgy, researchers have assembled a treasure trove of information about the Iceman. Beyond his height, weight, age and stomach contents, they have mapped the 61 tattoos on his body, many of which are located in spots where scientists saw joint and spinal degradation (suggesting the tattoos could have been part of some kind of medical treatment).

More relevant to Inspector Horn's investigation was analysis of the pollen in Ötzi's digestive tract, which led scientists to conclude that he probably died in late spring or early summer. They also found that in his last two days of life, he ate three distinct meals and walked...a lot. From an elevation of some 6,500 feet, he made his way down to the valley floor and then back up into the mountains. (His body was found at an elevation of some 10,500 feet.)
Other than the wound from the arrowhead, Ötzi had a big gash on his right hand between the thumb and forefinger. The cut went right down to the bone, but appeared to have healed slightly, suggesting the wound was one or two days old when he died.

After examining the evidence, Inspector Horn said he believed the Iceman might have walked down to the village in the valley and gotten involved in some kind of violent physical altercation—which he won. Calling the gash on Ötzi’s hand “a very active defensive wound,” Horn added that “no other injuries are found on the body, no major bruises or stab wounds, so probably he was the winner of that fight, even possibly he killed the person who tried to attack him.”

After the fight, Ötzi apparently left the village with a load of fresh supplies in his wooden-framed backpack. At 10,500 feet, he made camp and ate his last meal: ibex meat, a primitive form of wheat known as einkorn, some kind of fat (possibly bacon or cheese) and bracken, a common fern.

According to Horn, about half-an-hour after Ötzi ate, his killer shot him in the back from about 100 feet away. The arrow traveled under his left armpit and ripped through his subclavian artery. Death likely came quickly, as even in modern times such a wound would probably not have been treatable.

As the killer left Ötzi’s belongings behind, including his valuable copper ax, Horn didn’t believe robbery could be a motive. In fact, leaving the ax suggested the killer might have wanted to cover his tracks, and not attract attention by bringing such an unusual weapon back to the village. Like most homicides today, Horn noted, the crime likely had a personal motive behind it, and might even have been an escalation of the violence that had begun earlier, in the village. Instead of taking his chances at close range, this time Ötzi’s attacker shot from a distance—and he shot to kill.

No matter how detailed the picture of the crime, one key piece will always be missing: the identity of the Iceman’s killer. “I’m not optimistic we’ll find the offender in Ötzi’s case,” Horn conceded.

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