

GHOST BUSTER

An Italian scientist revived the hunt for the mafia's boss of bosses. Declan Butler reports.

Bernardo Provenzano, Italy's most wanted man, was on the run for more than 40 years. Moving from one safe house to another, he became the godfather of the Sicilian Mafia in 1993, running the huge organization without ever using a telephone, communicating instead through tiny typed notes, *pizzini*, passed back and forth through a labyrinth of secret relays.

Over time, many outside the Mafia had begun to believe the rumours, and his lawyers' assertions, that he was dead. That was until an Italian scientist used DNA to confirm that Provenzano was still alive, relaunching the manhunt that led to his capture on 11 April last year.

Provenzano had risen up the ranks of the Mafia by mowing people down, earning him the nickname 'the tractor'. He was a member of the Corleone clan, which took control of the Sicilian Mafia after a power struggle in the early 1980s that left hundreds dead. Provenzano was the right-hand man, and natural heir, of Salvatore Riina, who was the Corleone boss and Sicilian godfather until his arrest in 1993.

The invisible enemy

The prosecutor who was most responsible for Riina's arrest, Giovanni Falcone, was murdered in 1992, and Provenzano was implicated in the crime. Pietro Grasso, who is now Italy's national prosecutor against organized crime, vowed to find Falcone's killers. But, as Grasso acknowledges, all the police had to go on was a photograph of Provenzano taken in 1959, and a computer-generated 'identikit' of what he might look like now — his invisibility led to another nickname, the ghost of Corleone. With few leads, there followed a decade of fruitless searching.

But Grasso never gave up. In 2005, he asked Giuseppe Novelli, head of the medical genetics lab at Tor Vergata University in Rome, to help identify Provenzano. "I was taken aback at first," says Novelli, a specialist in genetic fingerprinting. "I mean, how can you identify someone who you have no information about?"

But Grasso had a lead from a Mafia informant, or *pentito*, arrested in 2005. In 2002,



Wanted: Bernardo Provenzano in 1959; in 'identikit'; and on his capture last April.

the source said, Provenzano had gone to Marseille in France under a false name to be treated for a prostate tumour. A police raid at the clinic found a case history for a man named Gaspare Troia, who had never been admitted to the hospital. The patient's description matched Provenzano.

Novelli extracted DNA from hospital tissue samples and ran a DNA profile of both mitochondrial and Y-chromosome DNA. He then compared the DNA with that taken from blood samples of Provenzano's brother, stored in a Palermo hospital where he had been admitted for surgery.

The results came in November that year. "It showed that they shared the same mother and father — they were brothers," says Novelli. "The lead was the right one, they knew they had the right man."

"Novelli's group did a terrific job," says Grasso. "You cannot even imagine my enthusiasm when I had the proof of the complete match between the profiles." The result gave prosecutors and police the strength to carry on looking for Provenzano, adds Paola Di Simone, head of the Italian Scientific Police's Forensic DNA Unit in Palermo.

Knowing that Provenzano was alive, the investigators focused their attention on busting the ring of people who had provided the logistics of Provenzano's trip and hideout in Marseille. Last April, by tracking a packet of laundry sent by his wife, police captured Provenzano in an isolated farmhouse just a mile from his birthplace in Corleone.



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At the hideout, Di Simone collected DNA from false teeth, glasses and an electric razor to confirm Provenzano's identity. She also hoped to find DNA in the house pointing to the henchmen, but the only DNA was his. "Being in the den just after his capture was very emotional," she says.

Code of silence

Novelli told no one what he was working on, except his lab collaborator Ruggiero Mango, who also worked on the case. Grasso advised secrecy to protect the scientists and their families. Novelli admits to having worried for his safety. "I spent one year in a dangerous situation," he says, recalling flying once to Palermo to meet Grasso and being whisked away from the steps of the aircraft in a car.

"I didn't even tell my wife," says Novelli. "She learnt it from the TV after Provenzano had been captured." But he now

speaks openly about the work and says that he is no longer concerned for his safety. "It's finished, he is in prison. I think it is over — I hope so."

Provenzano was convicted *in absentia* in 1993 to life imprisonment for his involvement in the bombings that killed Falcone and another prosecutor, Paolo Borsellino, in 1992. He now faces further trials on other charges of murder and blackmail.

His capture also marked the end of an obsession for Grasso, who says he is overjoyed "to have fulfilled the promise I made on the grave of Falcone, that for the rest of my life I would pursue a sole objective: capturing all those responsible for his death."

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