Science casts doubt on famous British murder case

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Ninety-seven years after an American was hanged in London in one of the most notorious and famous murder cases in British history, forensic science at Michigan State University is producing evidence that his execution was a mistake.

Dr. Hawley Crippen was hanged for murdering and dismembering his showgirl wife, then fleeing with his mistress across the high seas with the police in hot pursuit. Loaded with enough sordid details and twists to eventually fuel more than 40 books and several movies, this London case is second only to Jack the Ripper in its sensational notoriety.

Back in 1910, it was forensic evidence that brought Crippen down. Now, David Foran, a forensic biologist and director of MSU's forensic science program, partnering with clinical and forensic toxicologist John Harris Trestrail III, managing director of the regional poison center in Grand Rapids, is combining state-of-the-art DNA analysis with solid sleuthing to show the remains buried in Crippen's basement couldn't have been his wife.

"This can't be Cora Crippen," Foran said. "We're certain of that."

For nearly a century, Crippen, a homeopathic physician, was thought to have poisoned his flamboyant and domineering wife with an obscure toxin, dismembered her body and buried little more than tissue in his London cellar. Crippen was labeled "one of the most dangerous and remarkable men who have lived in this century."

Trestrail has been engrossed by the case for 40 years. One of the nation's leading experts in poisoning, he knew dismemberment and poisoning don't go together.

"There were no identifying parts of the remains found, no head, no bones, no organs of gender. I've always wondered who is that under the steps?" Trestrail said. "Was he telling the truth? Now we have the possibility to bring the science of DNA up against actual specimens from the trial to answer the question: 'Was that her under the steps or wasn't it?'"

Trestrail formed a team with Foran and Beth Wills, a genealogist from Ionia, to resolve what he saw as inconsistent evidence.

Foran's laboratory specializes in ancient and forensic DNA evidence, often working with human remains that are thousands of years old. The nearly 100-year-old microscope slide, sent to Michigan State from the Royal London Hospital Archives and Museum, is the same one the pathologist Bernard Spilsbury used to help hang Crippen. In 1910, forensic pathology was more primitive;

Spilsbury's testimony, identifying what he claimed was an abdominal scar consistent with Cora's medical history, convinced the jury that these were Cora's remains.

Crippen went to the gallows insisting he was innocent.

The present-day challenge: getting past the pine sap that sealed the slide and the formaldehyde used to preserve the tissue in order to examine the mitochondrial DNA that could identify Cora Crippen based on the genetic history of her maternal relatives.

Mitochondrial DNA is the genetic blueprint that is passed down in the

egg from mother to daughter. Unlike regular DNA, which comes from the cell's nucleus, Foran explained that mitochondrial DNA remains more stable in aged tissue and is easier to retrieve. Also, mitochondrial DNA remains relatively undiluted through generations, offering a reliable familial match.

Foran's laboratory has devised methods to extract and isolate mitochondrial DNA. Unable to break through the sap seal, he chipped away at the slide's glass cover slip to get at the tissue sample. One of his graduate students recently studied ways to work around formaldehyde fixation to isolate DNA.

The goal: compare the mitochondrial DNA in the slide that convicted Crippen with Wills' assignment – finding a maternal relative of Cora Crippen. If Hawley Crippen indeed killed his wife and buried some of her remains in the cellar, those remains would share specific DNA characteristics with Cora Crippen's current day relatives. To paraphrase the famed attorney in the O.J. Simpson murder trial, Johnnie Cochran, if the DNA doesn't fit, you can't convict.

Wills spent some seven years pouring through genealogical records and taking on the somewhat nontraditional task of finding living female relatives of Cora Crippen's mother.

"Usually, in genealogy, you work backwards, but in this case, we went forward," she said.

As she traced through the family line, she found elderly relatives who remembered talk of a family scandal, one where a woman had been murdered by her husband in London. She ultimately located three grandnieces.

"We took a lot of precautions when doing this testing," Foran said. "We

just didn't stop. We went back and started from scratch and tested it again. The DNA in the sample is different from the known relatives of Cora Crippen."

"Crippen was not convicted just of murder – but the murder of Cora Crippen," Trestrail said. "If that body is not Cora, then that's another trial."

Source: Michigan State University