

## Sherlock Holmes and Me

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By John M. Butler, NIST Fellow and Special Assistant to the Director for Forensic Science, Office of Special Programs

As a kid, I loved to read Sherlock Holmes stories. *The Hound of the Baskervilles*, *A Study in Scarlet*, and *The Red-Headed League* were some of my favorites. I was drawn to this famous fictional detective's ability to solve seemingly any problem and to carefully observe details that others missed. These adventures written by Arthur Conan Doyle in the late 19th century and early 20th century piqued my interest in science and crime solving—an interest that has grown into a meaningful career in forensic science in the 21st century.

After studying chemistry as an undergraduate at Brigham Young University, I enrolled in the University of Virginia for graduate school so I could work on forensic science research. Following my first year of coursework and student teaching, I moved to Quantico, Va., where I worked in the Forensic Science Research Unit of the FBI Laboratory for several years on new methods to improve forensic DNA testing. There I helped pioneer techniques now used around the world.

I first came to NIST as an NRC postdoc in 1995 and over the past two decades have enjoyed working with others at NIST to build an international reputation for the agency's forensic DNA efforts, and more recently for the entire NIST forensic science program.

I have written five textbooks on forensic DNA analysis, which have been translated into other languages and are used around the world. In several of my textbooks, I have provided Sherlock Holmes quotes at the beginning of chapters as sage advice. For example, chapter 12 in my 2005 book *Forensic DNA Typing* quotes from the Sherlock Holmes story *A Scandal in Bohemia*: "It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts." Chapter 13 begins with "It is an old maxim of mine that when you have excluded the impossible, then whatever remains, however improbable, must be the truth" (from *The Adventure of the Beryl Coronet*). These quotes provide a small way for me to honor the inspiration that Sherlock Holmes was to my choice of career.

This past February I had the opportunity to visit 221B Baker Street, Sherlock Holmes' address in London. Although that address on Baker Street was a figment of Arthur Conan Doyle's imagination, the Sherlock Holmes Museum now located at that address has created a wonderful commemoration of the apartment where the detective and his associate Dr. Watson lived in their famous stories. I had been invited to London to speak on the future of forensic DNA for the first forensic science meeting ever held at the Royal Society, the oldest science association in the world. I began my talk with the photo shown above, using a caption saying that I was looking for DNA evidence of Sherlock Holmes on his pipe. During a break in the meeting, a concerned person from the audience came up to me and said, "You do know that Sherlock Holmes is not a real person, right?" I laughed and responded, "You do know that I cannot detect DNA with a magnifying glass, right?"



**The author of this essay in the Sherlock Holmes Museum in February 2015.**

**Photo credit: Scott Musgrave**

This past year I have been researching a National Bureau of Standards scientist named Wilmer Souder, who was one of the first forensic scientists in the United States. He was referred to as “Washington’s Detective X” in a July 1951 *Reader’s Digest* article about some of his cases. I was delighted to find a 1929 newspaper article (the *Oshkosh (Wis.) Daily Northwestern*, June 5, 1929) that describes Souder’s work with the headline “The Sherlock Holmes of Tomorrow Will Be Standardized.” The article begins, “The Sherlock Holmes of tomorrow will not be a detective solving baffling mysteries by his own cleverness but a scientific expert relying upon standardized methods of precise identification. This prediction was made by Wilmer Souder of the Bureau of Standards, in placing before the national conference of weights and measures the bureau’s work with the problems of identification.”



**The second-floor study in the Sherlock Holmes Museum at 221B Baker Street in London.**

**Photo credit: John Butler**

In his June 1929 presentation to the conference, Souder shared his approach to solving crimes with careful scientific analysis\*. A few years later FBI Director J. Edgar Hoover asked Souder to help set up the FBI Laboratory. We are analyzing Souder’s notebooks and his records of applying his scientific approach to more than 800 cases from 1929 to when he retired from NBS in 1954.

Fast-forward from 1929 to the present, and NIST and the Organization of Scientific Area Committees (OSAC) have an active effort to help standardize forensic science protocols, an effort that began last year in a partnership with the Department of Justice.

As I reflect on my career in forensic science research, I sometimes wonder what kind of crimes Sherlock Holmes could have solved in his day if only DNA testing methods were available to him. I can almost hear him say, “Why, it’s elementary, my dear Watson—the DNA profile will help us solve this crime!” \*\*

\* Souder, W. “Identification of typewriters and guns by precision methods of comparison and measurement.” *Technical News Bulletin of the Bureau of Standards*, July 1929, pp. 61-63.

\*\*It is worth noting that while the phrase “elementary, my dear Watson” is commonly associated with Sherlock Holmes, he actually never utters it in any of Arthur Conan Doyle’s stories.

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*Inside NIST > Public Affairs Office > Sherlock Holmes and Me*  
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