

SHERLOCK HOLMES: The Education of the World's First Forensic Scientist

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Introduction

There is ample published material to support the assertion that Sherlock Holmes was the world's first forensic scientist or criminalist. He was the very first individual to apply the Methods of scientists to the solution of criminal cases and other mysteries.¹ In this treatise, I will attempt to show how his education and life experiences led to this evolutionary process.

Several books and articles attribute the invention of forensic science to Mr. Sherlock Holmes, often attributed to the Literary Agent, Sir Arthur Conan Doyle. According to Richard Safferstein, Ph.D., "Sir Arthur Conan Doyle had a considerable influence on popularizing scientific crime-detection methods through his [sic] fictional character Sherlock Holmes. It was Holmes who first applied the newly developing principles of serology (see Chapter 12), fingerprinting, firearm identification, and questioned document-examination long before their value was recognized and accepted by real life criminal investigators."² As support, Dr. Safferstein quotes the text at the beginning of *Study in Scarlet* (STUD), in which Mr. Holmes expounds upon the importance of the "Sherlock Holmes Test for Blood" as the "most practical medico-legal discovery for years."

In his 1983 book, the editor, Samuel M. Berger, Ph.D., BSI, included an entire chapter that identifies Sherlock Holmes' contributions to the development of forensic science. Dr. Berger discussed the Sherlock Holmes Test for blood in relation to tests that were available during that era. He concludes with the statement: "Perhaps the story *A Study in Scarlet* by Conan Doyle gave impetus to the development of improved methods in blood identification."³ I'm certain that we would all concur in that claim. Articles by chemists James F. O'Brien⁴ and Christine L. Huber⁵ may be consulted for in depth evaluations of the revolutionary blood test devised by Sherlock Holmes.

In her more recent book, Judy Williams discusses how the careful, well-contrived methods worked out by Sherlock Holmes led to the development of the modern science of forensics.⁶ She sums up his contribution to the scientific method of crime detection as follows: "He did not solve his cases by inspired guesswork or intuition, but by a combination of careful examination, hard work and logic, just like the present day forensic scientist, to arrive at a conclusion based more often than not on a balance of probabilities pointing to the guilt or innocence of the suspect."

It would be very inappropriate to claim that Sherlock Holmes was the very first person to use a scientific approach to the solution of criminal cases. However, he was the first to formalize his experiments and observations into a scientific discipline as early as 1881. As indicated by Mr. Holmes himself in *A Study in Scarlet*, there was already a guaiacum test available for that use.⁷ Thus, the concept, at least, had already been formulated. In addition, although Mr. Sherlock Holmes had the practice of "beating the subjects in the dissecting-rooms with a stick" to see how long after death bruising can be manifested, he was not the first to engage in this practice. According to Mr. Owen Dudley Edwards researches, "this was actually a forensic medical experiment carried out by Christison in Nov. - Dec. 1828 to discover if the bruises on the sole of a corpse obtained by the police . . . were caused by accidents in packing the deceased."⁷ Christison "used a number of animal and human corpses and struck them at various carefully timed intervals to determine whether bruising could be induced subsequent to death."

Then, there is the pioneering work of Dr. Joseph Bell, as exemplified in the TV production that was shown on the Discovery Channel on Oct. 5, 2004. *Sherlock Holmes the True Story: "Who is Dr. Joseph Bell?"*⁸ As stated on their web site, think Sir Arthur Conan Doyle, pipe smoker, funny hat. Sherlock Holmes wasn't simply conjured up by the author. No indeed. The fact is, one of the most recognizable figures in all of literature was based on the personality, physical appearance, and diagnostic genius of a little-known Edinburgh doctor." Although Dr. Bell used his scientific expertise to assist the Edinburgh police in solving cases of murder, he did not develop his researches into a new scientific discipline. Nor did he enlarge the field of inquiry by exploring new scientific methods of analysis. For this, we must give full credit to Sherlock Holmes, the world's first forensic scientist.

It was not until 1893, a full seven years after the publication of *STUD* and 12 years after Sherlock Holmes formulated his famous test for blood, that the very first book published on this subject appeared.⁹ Hans Gross organized his information into a book entitled *Handbuch für Untersuchungsrichter* in which he first used the term "Kriminalistic." However, not being a scientist, he did not contribute new research to the field in the manner associated with Sherlock Holmes . . .

Education in The Early Years

Three cases, very well documented by John H. Watson, M.D., provide most of the evidence required to piece together the evolutionary and educational processes that resulted in Sherlock Holmes originating the scientific discipline, forensic science and criminalistics: *The Gloria Scott* (GLOR), *Musgrave Ritual* (MUSG), and *Study in Scarlet* (STUD).¹⁰⁻¹²

The available evidence appears to support the theory that Mr. Sherlock Holmes was home-schooled as a child, via a personal tutor on his parent's estate, and through

extensive travel. After all, he was the scion of a “family of country squires who appear to have led the same life as is natural to their class.”¹³ The fact that his grandmother was French, “the sister of Vernet, the French artist,” would have provided excellent inducement for the family to frequently travel to Europe and for Mr. Holmes to become fluent in her native tongue during that time. According to Sherlock Holmes himself, he “was never a very sociable fellow, Watson, always rather fond of moping about in my rooms and working out my own little methods of thought, so that I never mixed much with the men of my year.”¹⁰ I suggest that had Mr. Holmes received an education at one of England’s prestigious public schools, his aversion to social contact would have been beaten out of him by his classmates. A further support for his solitary upbringing is the fact that he never participated in team sports. “Bar fencing and boxing, I had few athletic tastes,” Sherlock Holmes declared. Then, as I will later demonstrate, Mr. Holmes did not matriculate in a university until he was 20 years old, in 1874. Had he followed the standard path, such as that attributed to his contemporary Dr. Arthur Conan Doyle, he would have initiated his college career at an earlier age, perhaps 17 or 18.¹⁴ I suggest that he delayed his entry into the world of higher education due to a lack of enthusiasm for a disciplined plan of study that he would have had to follow at any major college. As we see later, he never accepted that requirement. However, since the son of a [sic] aristocratic family must do something in life, he was obligated to go up to university, and go up he finally did. Of course, there are many other possible reasons for his late entry into the university, such as illness or a need to stay at home to help care for a sick relative. One could also speculate that he spent time with his French relatives studying art and music or that he entered the world of the theater as a sign of Bohemian rebellion. However, I suspect that the initial explanation fits his lack of desire to follow any standardized path of study. He resisted until he had no other choice, perhaps under the threat of disinheritance.

When Were His College Years?

First, let us speculate on the years in which Mr. Holmes pursued his collegiate, intercollegiate, and post-collegiate education. Most evidence suggests that Mr. Holmes began his collegiate career at the late age of 20. In GLOR, Sherlock Holmes established that he spent two years in college during which he befriended Victor Trevor. According to Baring-Gould, GLOR took place in 1874.¹⁰ It goes without saying that almost everyone agrees that Sherlock Holmes was born in 1854, making him 20 years old at the time of this episode.

During GLOR, after having spooked the elder Trevor by an episode of observation and deduction during a visit to his estate, Sherlock Holmes left to return to London. According to Mr. Holmes, “All this occurred during the first months of the long vacation. I went up to my London rooms, where I spent seven weeks working out a few experiments in organic chemistry.” Thus, even during his tenure at a University, Mr. Holmes was engaged in chemical experimentation. The Canon is silent as to whether these were original

research problems or assigned studies, but they set the stage for his becoming an individual researcher later in life.

Later, during the activities described in MUSG, Mr. Holmes had not seen Reginald Musgrave in four years.¹¹ This encounter was dated as 1879 by Baring-Gould, when Holmes was 25 years old.¹⁵ Counting back, it is logical to calculate that this reunion took place four years after Holmes' second collegiate year.

Prior to MUSG and after leaving college in 1876, Sherlock Holmes "had rooms in Montague Street, just round the corner from the British Museum, studying all of those branches of science which might make me more efficient." This self study began in 1876, and continued through 1881 when Holmes and Watson, paired at last, took up their famous quarters at 221B Baker Street. From that time on, Sherlock Holmes was able to continue his studies as well as the chemical researches that he had, for some unspecified time, performed during his tenure as a student at St. Barts [sic] and initiated during his first year at an unspecified university.

What University Did He Attend?

Based on his elevated status in society, it appears obvious that Sherlock Holmes attended one of the two more prestigious and ancient universities in England, Oxford or Cambridge. After all, he was a member of the upper class, and that is where upper class students were sent. Sherlock Holmes' status is evidenced in several ways. For example, he insisted on being referred to with the prefix *Mister* before his name when addressed by Count Silvius. This is clearly the mark of a member of the gentry.¹⁶ Further, Mr. Holmes always used the first class carriage when traveling by train. In that era, "most people accepted their place in the class hierarchy" and chose the class of railroad cars accordingly.¹⁷ It would be unseemly for a middle class individual, regardless of income, to do so. And finally, as stated before, Mr. Holmes was descended from "country squires who appear to have led the same life as is natural to their class."¹³ In addition, only Oxford or Cambridge would have been appropriate for the son of a wealthy land owner such as Mr. Trevor, and it would be unthinkable for someone with the social status of Reginald Musgrave to attend a lesser institution.¹⁹

However, beyond that, we cannot go. "Dozens of scholars" have attempted to determine which of these ancient universities can lay claim to Sherlock Holmes.¹⁸ Even the elegant researches of the noted author and Sherlockian scholar Dorothy Sayers were unable to provide a definite conclusion.¹⁹

There have been several attempts to define Sherlock Holmes' major course of study and therefore his college and university without any success.^{18, 19} I would suggest that Mr. Holmes refused to commit himself to a specific course of study, regardless of the college he chose to enter. He had not chosen his field of endeavor and, as he himself stated, was

“always rather fond of moping in my rooms and working out my own little methods of thought”¹⁰ I am certain that this lack of attention to a specific course of study would not enamor him to his tutor.

I suggest that at the beginning, Mr. Holmes attended college at the strict desires of his forebears. As a member of the upper class, but not the eldest son who would inherit the estate, he was expected to attend university and establish himself in an appropriate profession such as the military, law, clergy, medicine, or university don in the same manner that his older brother Mycroft became an accountant for the British Government.¹³ At the same time, he would have been expected to make contacts with other members of his college for future networking opportunities. These, no doubt, actually did come into play during the years of his active professional life, helping explain the large number of highly placed individuals who came to his quarters seeking assistance. The only record of a specific academic interest that we have is in chemistry. As we learn in GLOR, Sherlock Holmes spent part of his long vacation in London performing “private chemical researches.”¹¹ That he was not engaged in a normal scientific curriculum can be derived by observing Dr. Watson’s later critique of Mr. Holmes’ scientific knowledge.¹² Had he done so, we would expect a more general knowledge of various aspects of science in addition to chemistry. However, we learn from “Sherlock Holmes - his limits, that his knowledge of Astronomy was nil, Botany - variable except for poisons, Geology - practical but limited, and Anatomy - accurate but unsystematic.” Thus, it appears quite likely that he only paid attention to those subjects which interested him.

The Great Epiphany

The situation changes abruptly in the long vacation of 1874. Sherlock Holmes discovers his true purpose in life, a reason to learn and study. It all happened during Mr. Holmes first visit to the estate of his painfully acquired friend Victor Trevor.¹¹ We owe a sincere debt of gratitude to Trevor’s father whose very utterances will forever be regarded as the impetus which led Sherlock Holmes from his life of indecision and lassitude to a remarkable career as a scientific detective. We all recall the elder Mr. Trevor’s words that should be engraved on a monument for all to see: “I don’t know how you manage this, Mr. Holmes, but it seems that all of the detectives of fact and fancy would be children in your hands. That’s your line of life, sir, and you may take the word of a man who has seen something of the world.”

And then came the words from Sherlock Holmes that will forever change the history of forensic science and scientific crime detection. He turned to Dr. Watson with a sense of purpose and remarked: “and that recommendation, with the exaggerated estimate of my ability with which he prefaced it, was, if you will believe me, Watson, the very first thing which ever made me feel that a profession might be made out of what had up to that time been the merest hobby.” There we have it, the epiphany that set Sherlock Holmes on the

course to be the world's foremost consulting detective and the world's foremost protagonist of scientific investigation.

Continuing Education

After leaving college, Mr. Holmes sets out a program of self study to prepare himself for his chosen vocation. As he related to Dr. Watson, "When I first came to London I had rooms in Montague Street, just round the corner from the British Museum, and there I waited, filling in my leisure time by studying all of those branches of science which might make me more efficient."¹ No doubt, Mr. Holmes also began, at that time, the chemical researches that took him to the chemical laboratory in St. Bart's as well. Although it was possible for Sherlock Holmes to take examinations for a degree at London University or University College, I do not think that this ever came to pass. After all, into what standard discipline would there be an examination that would be commensurate with the studies that Sherlock Holmes imposed upon himself?

Uniquely, *Study in Scarlet* documents the later stages of scientific education that prepared Sherlock Holmes for his lifelong career.¹ Young Stamford, who appears briefly only to disappear forever after that, utters the very first descriptions of Mr. Sherlock Holmes. Stamford tells us that Sherlock Holmes is "a little queer in his ideas - an enthusiast in some branches of science." Additionally, "He is well up in anatomy, and he is a first-class chemist; but as far as I know, he has never taken out any systematic medical classes. His studies are desultory and eccentric, but he has amassed a lot of out-of-the-way knowledge which would astonish his professors." And, Sherlock Holmes "beat the subjects in the dissecting-rooms with a stick . . . to verify how far bruises may be produced after death." Here we have a young man, who, we will eventually learn many cases later, has attended, but probably never graduated from, one or the other of England's two most prestigious universities, Oxford or Cambridge. Currently, we find him at a medical school, not studying medicine but pursuing a variety of scientific disciplines that we will find out later, will prepare him to approach the solution of criminal activities in a scientific manner. Clearly, Sherlock Holmes was a man ahead of his time. What seemed odd then is very common now. Basic science departments in medical schools, in addition to providing professional education for future physicians, supply academic graduate and postdoctoral training to research scientists leading to a Ph.D. degree or equivalent. In fact, most of the research funding in such departments supports the work of graduate students and postdoctoral fellows. The innovative academic program that Sherlock Holmes created for himself in the Victorian era is not unlike that received by scientists in toxicology and forensic science. But, Sherlock Holmes was the first.

¹ Heifetz, Carl L. *A Study in Scarlet Yields to the Methods of Sherlock Holmes, Scientist*, *Wigmore Street Post Office*, Issue Number 12, Summer 1998, p 18-21,24 and *The Hounds Collection* Vol. 5, April 2000, p 13-17.

² Safferstein, Richard, Ph.D. Chapter 1, History and Development of Forensic Science In: *Criminalistics An Introduction to Forensic Science*. 7th Ed. Prentice Hall, Upper Saddle River, New Jersey, 2001, pp 2-3.

³ Gerber, Samuel L. Chapter 3.A Study in Scarlet Blood Identification in 1875 In: *Chemistry and Crime. From Sherlock Holmes to Today's Courtroom*. American Chemical Society, 5th printing, 1992, pp 31-35.

⁴ O'Brien, James F. What Kind of Chemist was Sherlock Holmes. *Chemistry and Industry*. 7 June 1993, 394-8.

⁵ Huber, Christine L. The Sherlock Holmes Blood Test. *The Baker Street Journal*. 37 (4) (Dec.) 1987, 215-20.

⁶ Williams, Judy. Chapter 1. Sherlock Holmes and the History of Forensic Sciences. In *The Modern Sherlock Holmes*. Broadside Books Ltd., London, 1991, pp 13-16.

⁷ Edwards, Owen Dudley Ed., *A Study in Scarlet*. Oxford University Press, Oxford, 1993, 200 pages.

⁸ <http://www.ctvtravel.ca/shows/?mode=1&id=281>

⁹ DeForest, P. R., Petraco, N., and Kobilinsky, L. Chapter 4. Chemistry and the Challenge of Crime In: *Chemistry and Crime. From Sherlock Holmes to Today's Courtroom*. American Chemical Society, 5th printing, 1992, pp 45-63.

¹⁰ Doyle, A. C. The "Gloria Scott," 373-385 In: *The Complete Sherlock Holmes* by Arthur Conan Doyle, with a preface by Christopher Morley, Doubleday and Company, Garden City, New York, single volume, 1988.

¹¹ Doyle, A. C. The Musgrave Ritual, 386-397 In: *The Complete Sherlock Holmes* by Arthur Conan Doyle, with a preface by Christopher Morley, Doubleday and Company, Garden City, New York, single volume, 1988.

¹² Doyle, A. C. *A Study in Scarlet*, pp 15-86 In: *The Complete Sherlock Holmes* by Arthur Conan Doyle, with a preface by Christopher Morley, Doubleday and Company, Garden City, New York, single volume, 1988.

¹³ Doyle, A. C. "The Greek Interpreter," pp 435-446 In: *The Complete Sherlock Holmes* by Arthur Conan Doyle, with a preface by Christopher Morley, Doubleday and Company, Garden City, New York, single volume, 1988.

¹⁴ Rodin, A. E. and Key, Jack D. Chapter 1, Student and Practitioner, pp 3-77 In Medical Casebook of Doctor Arthur Conan Doyle, Robert E. Kreiger Publishing Company, Inc., Malabar, Florida, 1984.

¹⁵ Baring-Gould, William S. In: *The Annotated Sherlock Holmes*. Vol. 1 Clarkson N..Potter, Inc., New York, 690 pages.

¹⁶ Doyle, A. C. "The Adventure of the Mazarin Stone," pp 1012-22 In: *The Complete Sherlock Holmes* by Arthur Conan Doyle, with a preface by Christopher Morley, Doubleday and Company, Garden City, New York, single volume, 1988.

¹⁷ Mitchell, S. Chapter 2 The Foundation of Daily Life: Class, Tradition, and Money. In *Daily Life in Victorian England*. Greenwood Press, Westport, Conn.

¹⁸ Klinger, L. S. "The Gloria Scott" In *The New Annotated Sherlock Holmes Vol. I*, pp 501-527, Norton and Co., New York, 2005.

¹⁹ Sayers, D. L. Holmes College Career In *Sayers on Holmes*, pp12-21, The Mythopoeic Press, Altadena, California.