

HOW JACK THE RIPPER SHAPED FORENSIC
INFRASTRUCTURE IN THE SCOTLAND YARD

Ike Emmert

AP European History

April 6, 2026

2324 Words

The Whitechapel murders of 1888 shocked Victorian Britain and rapidly became a test of the Metropolitan Police's competence.¹ Newspaper coverage emphasized both the brutality of the crimes and the police's failure to identify the killer. Many Londoners began to lose trust in Scotland Yard, and critics portrayed investigators as disorganized. The current investigative methods of eyewitness testimony and patrol-based surveillance were increasingly shown to be ineffective for the Yard. Although the murders did not directly cause the immediate adoption of fingerprinting, they exposed the limits of the existing investigative practice at a time when stronger forms of criminal identification began to develop.² Fingerprinting emerged through a longer process of reform in British India where Azizul Haque and Hem Chandra Bose created a system of large-scale fingerprint records. Fingerprint identification was later established at Scotland Yard in 1901.³

Before the first murder, Whitechapel was already fighting multiple problems: crowded streets, dark thoroughfares, and a poor population made surveillance difficult and gave investigators few reliable ways to identify someone.⁴ Against that background, the murder of Mary Ann Nichols on August 31, 1888 marked the beginning of what was later called the "canonical" Ripper murders.⁵ Her body was found in Buck's Row, a narrow, dark street where residents were essentially anonymous.⁶ The first medical examination showed deep cuts to the throat and severe abdominal injuries, while the early handling of the body at the morgue decreased the evidentiary value and revealed how limited contemporary procedures for

¹ New York Times, "WHITECHAPEL STARTLED-by a FOURTH MURDER. ITS CURIOUS and SHOCKING DETAILS." (New York: NY Times, 1888),

<https://timesmachine.nytimes.com/timesmachine/1888/09/09/106332341.html?pageNumber=1>.

² Begg, Paul. *Jack the Ripper: The Definitive History*. (New York: Routledge, 2004), pg 172.

³ Sodhi, G. S., and Jasjeet Kaur. *The Forgotten Indian Pioneers of Fingerprint Science*. (Current Science 88 no. 1), p. 185, <http://www.jstor.org/stable/24110116>.

⁴ Begg, *Jack the Ripper*, pg 13.

⁵ Sugden, Philip. *Complete History of Jack the Ripper* (London: Robinson, 1994), pg 402.

⁶ Sugden, *Jack the Ripper*, pg 65.

preserving physical evidence still were.⁷ In that sense, the Nichols case shows that patrols may discover a body, but they couldn't prevent or preserve the crime correctly.

On September 8th, Annie Chapman was murdered in the backyard of 29 Hanbury Street with escalated injuries.⁸ Medical testimony stressed the removal of organs and the speed with which the murderer must have worked.⁹ Witnesses placed Chapman with a man described as having a "shabby genteel appearance."¹⁰ These sightings ultimately didn't give investigators any leads. The eyewitness testimony was nearly useless – the witnesses saw the suspect briefly in horribly dark conditions, and offered impressions that were often contradictory.¹¹ The murder at Hanbury Street was proof that the police could assess the aftermath of a crime, but they could not identify a culprit.

On the night of September 30, 1888, Elizabeth Stride (in Berner Street) and Catherine Eddowes (in Mitre Square) were murdered in an event known as the "Double Event" because they both occurred within an hour. This group of killings is the only appearance of Jack the Ripper supposedly striking twice in one night.¹² Stride's body was found in Dutfield's Yard with her throat cut, but without the abdominal mutilations. Many investigators suspect that the murderer was interrupted by Louis Diemschutz's arrival in the yard.¹³ The second murder, which took place in London city limits (complicating the investigation by spreading the jurisdiction across two police departments), was found with much worse mutilations.¹⁴ Police later found a

⁷ "Casebook: Jack the Ripper - Daily Telegraph - 19 September 1888." 2025. Casebook.org. 2025.

https://www.casebook.org/press_reports/daily_telegraph/dt880919.html.

⁸ New York Times, "WHITECHAPEL STARTLED-by a FOURTH MURDER. ITS CURIOUS and SHOCKING DETAILS." (New York: NY Times, 1888),

<https://timesmachine.nytimes.com/timesmachine/1888/09/09/106332341.html?pageNumber=1>.

⁹ Ibid.

¹⁰ Begg, *Jack the Ripper*, pg 165.

¹¹ Sugden, *Jack the Ripper*, pg 139-144.

¹² Sugden, *Jack the Ripper*, pg 192-195.

¹³ Ibid, 192-195.

¹⁴ Ibid, 200-203.

bloodstained piece of apron and antisemitic graffiti. The apron was confirmed to be linked to the Eddowes murder, while the graffiti was erased before it could be photographed. The Double Event shows how easily potentially valuable evidence can be, literally, erased from existence.¹⁵

The murder of Mary Jane Kelly on November 9, 1888, was the most horrific. Kelly was found inside her single room (the first murder committed indoors), which gave the killer privacy and time to commit his atrocities.¹⁶ Dr. Thomas Bond reported that Kelly's heart was missing when the body was examined.¹⁷ This murder increased public panic and showed the same weaknesses that haunted police from the start: Scotland Yard could describe the aftermath of the murder, but still lacked a system to turn the evidence Jack the Ripper left into identification.

Whitechapel's physical and social structure mattered because it made anonymity normal and surveillance weak. In the 1880s, the East End was overcrowded, and it allowed strangers to essentially disappear.¹⁸ Contemporary journalists explained that a killer could act "night after night in crowded neighborhoods without suspicion of his identity leaking out."¹⁹ Another said that in some areas cries of "Murder!" were so common that residents ignored them.²⁰ That environment made identification nearly impossible. Even victims and residents occasionally used aliases, like when Catherine Eddowes gave the police the name "Mary Ann Kelly" before her murder (in an unrelated event).²¹ It was incredibly difficult to distinguish one person from another in such obscurity.²²

¹⁵ Ibid, 205-7, 211-213.

¹⁶ Begg, *Jack the Ripper*, pg 254-257.

¹⁷ Sugden, *Jack the Ripper*, pg.353.

¹⁸ Begg, *Jack the Ripper*, pg. 13-14.

¹⁹ "Casebook: Jack the Ripper - BLOODHOUNDS AS DETECTIVES (London: Morning Advertiser, 1888) https://www.casebook.org/press_reports/morning_advertiser/18881008.html.

²⁰ Begg, *Jack the Ripper*, pg. 64.

²¹ Sugden, *Jack the Ripper*, pg. 263

²² Begg, *Jack the Ripper*, pg. 13-14.

Scotland Yard, lacking modern forensic tools, pursued the Whitechapel murders with witness statements, physical descriptions, inquest testimony, and the process of elimination.²³ Witnesses occasionally saw would-be victims with men before their murders, but they typically saw them quickly in poor lighting. For example, in Annie Chapman's case, Elizabeth Long described the man as "shabby genteel," said he looked like a foreigner, and admitted she had only seen his back and could not identify him again.²⁴ A fuller comparison of conflicting witness descriptions is detailed in Appendix A. Newspapers saw the same issues; one report in 1888 said that the police had "practically no clue,"²⁵ The idea of bloodhounds gained some support as a desperate alternative.²⁶ The proposal did not come from Edward Henry (who was instrumental to the later implementation of fingerprinting). Opinion was overall divided. Some commentators praised bloodhounds, while others argued that the crowded streets were essentially impossible to track regardless.²⁷

As the investigation slowed, newspapers shifted their reporting from the murders to the police's ineptitude.²⁸ Even foreign papers like the *New York Times* specified that the London police force were "the stupidest in the world," and that the murderer would remain "undetected, unseen, and unknown."²⁹ Some local papers, like *The Times* (London) echoed the same sentiment, they condemned the "stupidity and ineptitude revealed at the East-end inquests."³⁰

Public distrust was ramping up, and it only intensified as the press presented the murders as

²³ Sugden, *Jack the Ripper*, pg. 124.

²⁴ Casebook.org. "Casebook: Jack the Ripper - Daily Telegraph - 20 September 1888," 2026. https://www.casebook.org/press_reports/daily_telegraph/dt880920.html.

²⁵ Casebook: Jack the Ripper, THE WHITECHAPEL MURDERS.

²⁶ Casebook: Jack the Ripper - BLOODHOUNDS AS DETECTIVES.

²⁷ Ibid.

²⁸ "Casebook: Jack the Ripper - Times [London] - 27 September 1888." 2026. Casebook.org. 2026. https://www.casebook.org/press_reports/times/18880927.html.

²⁹ New York Times, "WHITECHAPEL STARTLED-by a FOURTH MURDER. ITS CURIOUS and SHOCKING DETAILS." (New York: NY Times, 1888), <https://timesmachine.nytimes.com/timesmachine/1888/09/09/106332341.html?pageNumber=1>.

³⁰ "Casebook: Jack the Ripper - Daily Telegraph - 19 September 1888." 2025. Casebook.org. 2025. https://www.casebook.org/press_reports/daily_telegraph/dt880919.html.

proof that London's police leadership lacked the organization needed to respond to the crimes.³¹ Overall, the press' scrutiny essentially forced the police to look toward administrative reform.

Before fingerprinting was standard, European police used anthropometry, Alphonse Bertillon's system of criminal identification that was based on bodily measurement.³² Investigators recorded suspects through measuring stable body parts with photographs and notes. They hoped to create a more systematic record to identify repeat criminals.³³ Anthropometry was an important step toward modern policing because it linked the body to a police file. However, the method was still vulnerable to inconsistency. It depended on so much precision that small errors could drastically reduce its reliability.³⁴ Larger urban policing systems would never have been able to effectively adopt anthropometry.³⁵

Fingerprinting attracted support because it seemed to solve the practical problems that limited anthropometry. Instead of relying on bodily measurements over time, fingerprinting used friction ridges that are unique to each individual.³⁶ Unlike anthropomorphic measurements, fingerprints don't change nor could they be convincingly disguised. Early research demonstrated that even identical twins would have different ridge characteristics, reinforcing the individualization of prints. Fingerprints slowly became the standard for criminal identification, as investigators were slowly able to link individuals to prior records or crime scenes with far greater certainty than measuring systems.³⁷ Fingerprinting displaced anthropometry because it was more scientific, more accurate, and easier to scale in an urban area like Whitechapel.

³¹ Ibid.

³² Cole, Simon A, *Suspect Identities: A History of Fingerprinting and Criminal Identification*. (Cambridge: Harvard University Press, 2009), pg. 45-46.

³³ Hueske, Edward, *Firearms and Fingerprints, Revised Edition*. (New York: Chelsea House, 2019), p. 51-52.

³⁴ Cole, Simon A, *Suspect Identities*, pg. 57, 133.

³⁵ Hueske, *Firearms and Fingerprints*, p. 52-53.

³⁶ Ibid, pg. 46-47, 41-42.

³⁷ Ibid, p. 1-4, 52-53.

Although printing later became associated with British policing, its important developments occurred in British India. Fingerprinting was used to support colonial India because officials wanted a method to identify people who changed identities.³⁸ In 1892, the Bengal police adopted Bertillon's anthropometric system but added fingerprints to the record cards, but within a few years, fingerprinting had outpaced anthropometry and essentially replaced it. By the late 1890s, fingerprints had begun to replace anthropometric records in Indian criminal bureaus.³⁹ In 1897, the first fingerprinting bureau was established in Calcutta.⁴⁰

Critically, the success of fingerprinting in India was reliant on innovation from administration as well. Azizul Haque and Hem Chandra Bose created the mathematical framework (although later attributed to Sir Edward Henry) that allowed for classification systems to make fingerprinting databases searchable.⁴¹ The contributions of those two was underappreciated for decades. Police needed a system to file and retrieve prints, and they provided it. By the early 20th century, fingerprinting was required to identify criminals, which was the precise infrastructure lacked by Scotland Yard during the Jack the Ripper investigation.⁴²

In the decades surrounding the Whitechapel murders, Scotland Yard underwent major reform as it fought the anonymous urban population. The Yard, under the advent of record keeping, shifted away from anthropometry. For example, at this time, detectives relied on a practice where three times a week, officers attempted to recognize known criminals by sight alone.⁴³ Obviously, this method proved ineffective in a city like London. The Habitual Criminals Bill of 1869 and the Prevention of Crimes Act of 1871 forced police to adopt alphabetical

³⁸ Sodhi, G. S., and Jasjeet Kaur. *The Forgotten Indian Pioneers of Fingerprint Science*. (Current Science 88 no. 1), p. 185, <http://www.jstor.org/stable/24110116>.

³⁹ Hueske, *Firearms and Fingerprints*, pg. 56.

⁴⁰ Sodhi, G. S., and Jasjeet Kaur. *Indian Pioneers of Fingerprint Science*, p. 186.

⁴¹ *Ibid*, p. 186-188.

⁴² *Ibid*, p. 187-188.

⁴³ Cole, Simon A, *Suspect Identities: A History of Fingerprinting and Criminal Identification*. (Cambridge: Harvard University Press, 2009), p. 19.

registers of repeat offenders with photographs. Later, the Register of Distinctive Marks indexed criminal records by scars, blemishes, and tattoos to categorize different bodies. At the time, many believed that crime stemmed from an overall small population of habitual offenders and that the state could combat this threat by finding these criminals.⁴⁴

The Whitechapel murders unfolded at a moment when Scotland Yard was still relying on traditional detective practices. Thus, the Ripper case exposed those limits to the wider public. However, in the years that followed, record-keeping reform pushed policing in a different direction. Those developments in record-keeping coincided with a specialization in detective work. Scotland Yard established technical officers that focused on classification and measurement, like the Anthropometric Office under Dr. John Garson, who believed that identification should be scientific, not detective work.⁴⁵ Figures like Inspector Charles Stockley Collins became known as technical (now called forensic) experts. This was a marking point of the rise of “mechanical objectivity,” in which standardized procedures replaced regular judgment.⁴⁶

The biggest reform came with the adoption of fingerprinting (to replace anthropometry) at Scotland Yard in 1901. After years of debate, the Belper Committee, led by Lord Belper, concluded that fingerprinting offered a faster, cheaper, and more reliable system of identification than Bertillon’s body-measurement method, leading to the formal abandonment of anthropometry.⁴⁷ Edward Henry, whose classification system already proved successful in British India, relocated to London to direct a switch to fingerprinting.

⁴⁴ Cole, *Suspect Identities*, p. 20.

⁴⁵ *Ibid*, p. 92-93.

⁴⁶ *Ibid*, p. 26, 165.

⁴⁷ *Ibid*, p. 93-94.

Fingerprinting quickly demonstrated its practical value in two major cases: the 1902 Harry Jackson burglary case, and the 1905 Mask (or Deptford/Stratton/Farrow) Murders. Inspector Charles Collins was able to match a thumbprint left on a freshly painted windowsill to Harry Jackson's inked records, which led to his seven-year confinement.⁴⁸ In 1905, Collins was able to identify eleven matching ridge characteristics between a bloody thumbprint found on a cash box and Alfred Stratton's fingerprint, leading to the conviction and execution of the Stratton brothers. Despite the defense questioning the reliability of fingerprints, the courts accepted the fingerprinting as decisive proof.

Had Scotland Yard possessed a fingerprint bureau with standardized procedures (which, in their support, would have been almost impossible), the structure of the Ripper investigation likely would have avoided speculation. Much of the suspect pool weighed on circumstantial evidence.⁴⁹ Fingerprinting would cleared "iffy" suspects, and match likely ones. In this context, physical traces like the Eddowes shawl illustrate how material evidence (that would've been largely inert by 1888) might have assumed a more important role in the investigation.⁵⁰

At the same time, any assessment of fingerprinting's hypothetical impact should be measured. Even in its mature 21st century form, fingerprint evidence is incredibly volatile, this careful procedure was often lacking in 19th century Victorian policing, particularly in an outdoor scene. Nonetheless, the contrast between what could be uncovered from material evidence now versus then is clear: the Whitechapel case showed an increasingly weak investigative environment.

Overall, the Ripper case was a catalytic failure. As discussed before, the Whitechapel murders showed the limits of eyewitness testimony, patrol-based policing, and informal

⁴⁸ Cole, *Suspect Identities*, p. 172.

⁴⁹ Begg, *Jack the Ripper*, pg 299-312.

⁵⁰ Louhelainen, Jari & David Miller, *Forensic Investigation of Jack the Ripper Shawl*.

identification. Although fingerprinting emerged later through colonial experimentation, it entered a metropolitan environment already sensitized to the consequences of investigative failure. In this sense, the Ripper case only contributed to the climate of scientific identification, even though they were articulated years after the murders themselves.

Institutional reform rarely follows a single event in such a direct or immediate fashion, particularly in large bureaucracies like Scotland Yard. Instead, changes like these are often delayed to the point where the failures that caused them were just organizational memories. These memories are then called back to as justification for the new practices. The adoption of fingerprinting was no different, and its implementation had to be postponed for developments in record keeping, specialization, and colonial policing that unfolded independently of the Jack the Ripper case. While the murders did not “cause” fingerprinting in the narrative sense, they remain an essential piece of the broader history in context that led to the adoption of scientific identification. The Ripper case thus belongs at the origin of fingerprinting, but within the longer story of why modern policing sought objective forms of evidence that held them back in 1888.

Overall, the Whitechapel murders showed huge weakness in late-Victorian policing. For one, the case is still unsolved, and secondly, Scotland Yard ended up revamping their infrastructure a couple decades after the case. The investigation relied on patrol-based surveillance and eyewitness testimony, practices that repeatedly failed in London. In this sense, the Ripper case was a catalytic failure that exposed the weaknesses of nineteenth-century policing.

These exposed weaknesses naturally combined with broader developments in criminal identification. Specifically, reforms in record keeping, specialization of forensic labor, and the emergence of fingerprinting. Fingerprinting offered a solution to the problems that plagued

Ripper detectives. Yet its adoption in Scotland Yard reflected a long process of Indian experimentation, administrative committees, and early success as opposed to a direct response to the murders themselves. The legacy of the Jack the Ripper case is a culmination of creating the correct environment that called for necessary reforms. More broadly, the case illustrates how catastrophic failure led to the cultural need for change.

Bibliography

Primary

Casebook.org. "BLOODHOUNDS AS DETECTIVES - Morning Advertiser - 8 October 1888," 2026. https://www.casebook.org/press_reports/morning_advertiser/18881008.html.

Casebook.org. "FIFTH EDITION. THE WHITECHAPEL HORRORS. HORRIBLE MURDER OF A WOMAN NEAR COMMERCIAL ROAD. ANOTHER WOMAN MURDERED AND MUTILATED IN ALDGATE. ONE VICTIM IDENTIFIED. BLOOD STAINED POST CARD FROM "JACK THE RIPPER." SPECIAL ACCOUNTS. A HOMICIDAL MANIAC OR HEAVEN'S SCOURGE FOR PROSTITUTION. - Evening News - 1 October 1888," 2026. https://www.casebook.org/press_reports/evening_news/18881001.html.

Casebook.org. "POSSIBLE CLUES A FRAGMENT OF APRON. - Evening News - 1 October 1888," 2026. https://www.casebook.org/press_reports/evening_news/18881001.html.

Casebook.org. "THE MITRE SQUARE MURDER DESCRIPTION OF THE SQUARE. - Evening News - 1 October 1888," 2026. https://www.casebook.org/press_reports/evening_news/18881001.html.

Casebook.org. "THE REIGN OF TERROR IN WHITECHAPEL. AT THE SCENE OF THE CRIMES ON SUNDAY. SPECIAL. - Evening News - 1 October 1888," 2026. https://www.casebook.org/press_reports/evening_news/18881001.html.

Casebook.org. "THE WHITECHAPEL HORRORS. - Evening News - 1 October 1888," 2026. https://www.casebook.org/press_reports/evening_news/18881001.html.

Casebook.org. "THE WHITECHAPEL MURDER.- Times [London] - 27 September 1888," 2026. https://www.casebook.org/press_reports/times/18880927.html.

Casebook.org. "THE WHITECHAPEL MURDERS - Daily Telegraph - 19 September 1888,"
2026. https://www.casebook.org/press_reports/daily_telegraph/dt880919.html.

Casebook.org. "THE WHITECHAPEL MURDERS - Daily Telegraph - 20 September 1888,"
2026. https://www.casebook.org/press_reports/daily_telegraph/dt880920.html.

Casebook.org. "THE WHITECHAPEL MURDERS - Morning Advertiser - 8 October 1888,"
2026. https://www.casebook.org/press_reports/morning_advertiser/18881008.html.

"WHITECHAPEL STARTLED-by a FOURTH MURDER. ITS CURIOUS and SHOCKING
DETAILS." 2026. Nytimes.com. 2026.

<https://timesmachine.nytimes.com/timesmachine/1888/09/09/106332341.html?pageNumber=1>.

Secondary

Begg, Paul. 2004. Jack the Ripper. Routledge.

COLE, Simon A, and Simon A Cole. 2009. Suspect Identities. Harvard University Press.

EXPRESSION OF CONCERN: Forensic Investigation of a Shawl Linked to the "Jack the
Ripper" Murders. J Forensic Sci. 2024 Sep;69(5):1938. doi: 10.1111/1556-4029.15595.
Epub 2024 Aug 12. PMID: 39132924.

Hueske, Edward. 2019. "Firearms and Fingerprints, Revised Edition." Essentials of Forensic
Science. Chelsea House.

<https://ebooks.infobase.com/PortalPlaylists.aspx?wID=96998&ISBN=9781438182612>.

Sodhi, G. S., and Jasjeet Kaur. "The Forgotten Indian Pioneers of Fingerprint Science." Current
Science 88, no. 1 (2005): 185–91. <http://www.jstor.org/stable/24110116>.

Sugden, Philip. 2014. Complete History of Jack the Ripper. Robinson.

Appendix A

Table of eyewitness descriptions of Jack the Ripper. Compiled from inquest testimonies and interviews. Check below for sources.

Witness Name(s)	Age	Height	Complexion	Build	Hair	Clothes
Elizabeth Long	"over forty"	"a little taller than the deceased" (Annie Chapman was ~5 ft)	"he was dark", "he looked like a foreigner"			"a brown low-crowned felt hat", "a dark coat"
J. Best and John Gardner		"about 5ft. 5in."	"the man was no foreigner; he was an Englishman"		"a thick black moustache and no beard"	"a black morning suit", "a morning coat", "a black billycock hat, rather tall", "had on a collar"
Matthew Packer	"25-30"	"about 5.7."		"rather broad shoulders"		"long black coat buttoned up", "frock coat", "soft felt hat, kind of Yankee hat"
William Marshall	"middle-aged"	"about 5ft. 6in."		"rather stout"		"black cut-away coat", "dark trousers", "a round cap, with a small peak"
James Brown		"5ft. 7in."		"average build"		"a long dark coat"
William Smith	"twenty-eight years of age"	"about 5ft. 7in."				"his clothes were dark", "a cutaway coat", "a dark felt deerstalker's hat"
Israel Schwartz	"about 30"	"5 ft. 5in."	"fair"	"full face", "broad shouldered"	"hair dark", "small brown moustache"	"dark jacket and trousers", "black cap with peak"
Joseph Lawende	"30"	"5 ft. 7 or 8 in."	"fair"	"medium build"	"fair moustache"	"pepper and salt colour loose jacket", "grey cloth cap with peak of same colour", "reddish handkerchief tied in a knot, round neck"
Mary Cox	"about 36"	"about 5ft 5in"	"fresh", "blotchy face"	"stout"	"small side whiskers", "thick/full/short carrot moustache"	"shabby dark clothes", "all his clothes were dark", "dark overcoat", "longish coat", "black felt hat", "hard billy cock black hat"
George Hutchinson	"about 34 or 35"	"5ft6", "about 5ft 8in"	"complexion pale", "dark complexion", "Jewish appearance", "looked like a foreigner"		"hair dark", "slight/dark/heavy moustache, curled up each end", "bushy eyebrows", "no side whiskers", "chin was clean shaven"	"a long dark coat trimmed with astrachan", "a dark jacket under", "light waistcoat", "dark trousers", "dark/soft felt hat turned down in the middle", "button boots and gaiters with white buttons", "a very thick gold chain", "watch chain had a big seal with a red stone", "white linen collar", "black tie with horse shoe pin", "red handkerchief"

Original table and Original references:

Eyewitness Accounts. "Eyewitness Accounts." Google Docs, 2020.

https://docs.google.com/spreadsheets/d/1sJoiLA8XDow_IMNiHZZIEeKuivBBJ6RTYh-UJQhNrcY/edit?gid=0#gid=0.

Lemmi.no. "The Enduring Mystery of Jack the Ripper," 2021.

<https://www.lemmi.no/p/the-enduring-mystery-of-jack-the-ripper#references>.