**FORENSIC SCIENCE TIMELINE**

**PREHISTORY:** Early cave artists and pot makers “sign” their works with a paint or impressed finger or thumbprint.

3500 B.C.: Mesopotamians perform animal autopsies in order to communicate with divine forces.

1000 B.C.: Chinese use fingerprints to “sign” legal documents.

**SECOND CENTURY B.C.:** Erasistratus (c. 304–250 B.C.) and Herophilus (c. 335–280 B.C.) perform the first autopsies in Alexandria.

**C. 1000:** Roman attorney Quintilian shows that a bloody handprint was intended to frame a blind man for his mother’s murder.

1194: King Richard Plantagenet (1157–1199) officially creates the position of coroner.

**SECOND CENTURY A.D.:** Galen (131–200 A.D.), physician to Roman gladiators, dissects both animal and humans to search for the causes of disease.

**C. 1000:** Roman attorney Quintilian shows that a bloody handprint was intended to frame a blind man for his mother’s murder.

1194: King Richard Plantagenet (1157–1199) officially creates the position of coroner.

1200: First forensic autopsies are done at the University of Bologna.

1235: Sung Tzu publishes *Hsi Yuan Lu* (The Washing Away of Wrongs), the first forensic text.

1276: Zacharias Janssen (c. 1580–c. 1638) designs the first crude microscope with the help of his father, Hans.

1348–1350: Pope Clement VI (1291–1352) orders autopsies on victims of the Black Death to hopefully find a cause for the plague.

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1385: Antonio van Leeuwenhoek (1632–1723) employs a microscope to first see living bacteria, which he calls animalcules.

**C. 1400:** Medical schools are established in Padua and Bologna.

1500: Ambroise Paré (1510–1590) writes extensively on the anatomy of war and homicidal wounds.

C. 1591: Francois Demelle publishes the first treatise on document examination in France.

1642: University of Leipzig offers the first courses in forensic medicine.

1665: Anton van Leeuwenhoek (1632–1723) employs a microscope to first see living bacteria, which he calls animalcules.

1775: Carl Wilhelm Scheele (1742–1786) develops the first test for arsenic.

1784: In what is perhaps the first ballistic comparison, John Toms is convicted of murder based on the match of paper wadding removed from the victim’s wound with paper found in Tom’s pocket.

1801: Andrew Duncan Sr. (1744–1828) begins lecturing on legal medicine at Edinburgh University.

1806: Valentine Rose recovers arsenic from a human body.

1807: Andrew Duncan Jr. (1773–1832) becomes the first Professor of Medical Jurisprudence.

1810: The first use of document examination in a criminal investigation involves the analysis of ink dye on a document known as Konigin Hanschritt in Germany.

1813: James S. Stringham (1775–1817) becomes the first Professor of Medical Jurisprudence in the United States.

1813: Mathieu Joseph Bonaventure Orfila (1787–1853) publishes *Traité des poisons* (Treatise on Poison), the first toxicology textbook.
1821: Sevillas isolates arsenic from human stomach contents and urine, giving birth to the field of forensic toxicology.

1823: Johannes Purkinje (1787–1869) devises the first crude fingerprint classification system.

1835: Henry Goddard (1866–1957) matches two bullets to show they came from the same bullet mould.

1836: Alfred Swaine Taylor (1806–1880) develops first test for arsenic in human tissue.

1836: James Marsh (1794–1846) develops the hematin test to test for arsenic (Marsh test).


1853: Johann Ludwig Casper (1796–1858) publishes his classic textbook Finger Prints.

1857: The first paper on hair analysis is published in France.

1858: In Bengal, India, Sir William Herschel (1833–1917) requires natives sign contracts with a hand imprint and shows that fingerprints did not change over a fifty-year period.

1862: Izaka van Deen (1804–1869) develops the guaiac test for blood.

1863: Christian Friedrich Schönbein (1799–1868) develops the hydrogen peroxide test for blood.

1864: Friedrich Miescher (1844–1895) discovers DNA.

1875: Wilhelm Konrad Röntgen (1845–1923) discovers X-rays.

1875: Richard Caton (1842–1926) proves that animal brains possess electrical activity.

1876: Cesare Lombroso (1835–1909) publishes The Criminal Man, which states that criminals can be identified and classified by their physical characteristics.

1877: Medical examiner system is established in Massachusetts.

1880: Henry Faulds (1843–1930) shows that powder dusting will expose latent fingerprints.

1882: Sir Francis Galton (1822–1911) publishes his classic textbook Finger Prints.

1883: Hans Gross (1847–1915) publishes Criminal Investigation and coined the term criminalistics.

1887: In Sir Arthur Conan Doyle's first Sherlock Holmes novel, A Study in Scarlet, Holmes develops a chemical to determine whether a stain was blood or not—something that had not yet been done in a real-life investigation.

1889: Alexandre Lacassagne (1843–1924) shows that marks on bullets could be matched to those within a rifled gun barrel.

1890: Sir Edward Richard Henry (1850–1931) devises a fingerprint classification system that is the basis for those used in Britain and America today.

1890: Karl Landsteiner (1868–1945) delineates the ABO blood typing system.

1891: Paul Uhlenhuth (1870–1957) devises a method to distinguish between human and animal blood.

1897: The first systematic use of fingerprint evidence in Scotland Yard and adopts a fingerprint identification system in place of anthropometry.

1899: Harry Jackson becomes the first person in England to be convicted by fingerprint evidence.

1902: The first systematic use of fingerprints for criminal identification in the United States begins in the New York State Prison system.

1903: Oskar and Rudolf Adlar develop the benzidine test for blood.

1908: President Theodore Roosevelt establishes the Federal Bureau of Investigation.

1923: Wilhelm Konrad Röntgen (1845–1923) discovers X-rays.

1924: Holmes develops a chemical test for blood.
1910: Edmund Locard (1877–1966) opens the first forensic laboratory in Lyon, France.
1910: Thomas Jennings becomes the first U.S. citizen convicted of a crime by use of fingerprints.
1912: Masao Takayama develops a microcrystalline test for blood hemoglobin.
1913: Victor Balthazard (1872–1950) publishes his belief that each fired bullet carries unique marks.
1915: State of New York adopts the medical examiner system.
1919: John Fisher invents the helixometer.
1920: The Sacco and Vanzetti case brings ballistics to the public’s attention. The case highlights the value of the newly developed comparison microscope.
1923: The Bureau of Forensic Ballistics is established in New York City.
1924: Willem Einthoven (1860–1927) invents the electrocardiogram (EKG).
1924: Hans Berger (1873–1941) invents the electroencephalograph (EEG), the first objective test of human brain activity.
1925: Philip Gravelle and Calvin Goddard (1891–1955) develop the comparison microscope.
1929: The ballistic analyses used to solve the famous St. Valentine’s Day Massacre in Chicago lead to the establishment of the Scientific Crime Detection Laboratory (SCDL), the first independent crime lab, at Northwestern University.
1931: John Glaister (1856–1932) publishes his landmark book on hair analysis.
1932: FBI’s forensic laboratory is established.
1933: The FBI Law Enforcement Bulletin publishes W.H. Krogman’s seminal article on examining skeletal remains, bringing the field of anthropology to the world of forensic investigation.
1954: Indiana State Police Captain R.F. Borkenstein develops the breathalyzer.
1971: William Bass establishes the Body Farm at the University of Tennessee in Knoxville.
1972: The American Academy of Forensic Sciences establishes the Physical Anthropology Section.
1974: Detection of gunshot residue by SEM/EDS is developed.
1977: FBI institutes the Automated Fingerprint Identification System (AFIS).
1990: Congress establishes the Armed Forces Medical Examiner’s Office in the Armed Forces Institute of Pathology.
1990: The Combined DNA Index System (CODIS) is established.
1992: The polymerase chain reaction (PCR) technique is introduced.
1993: *Daubert v. Merrell Dow Pharmaceuticals* establishes new rules for the admission of scientific evidence into the courtroom and alters the Frye Rules set in 1923.
1994: The DNA analysis of short tandem repeats (STRs) is introduced.
1996: Mitochondrial DNA is first admitted into a U.S. court in *Tennessee v. Ware*.
1998: The National DNA Index System (NDIS) becomes operational.