

Forensic evidences

FORENSIC EVIDENCES



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PREFACE

The idea of writing this book for the purposes of investigating officers came from the fact that in the field at Scene of Crime when we met with the investigating officers then it has been observed that our investigating officers are lacking in scientific temperament and they do not give much importance to the scientific evidence present at the scene of crime, which in turn hampers the successful outcome to the criminal investigation. So when we have met them suggest them to fit the physical clues present at the spot and send them to FSL with a set of questions. Some of them when later on met told us that they do not have the idea that so much help can be got from the FSL through the analysis of physical evidences. So the comprehensive book was written in the simplest English which we think will certainly provide them basic knowledge of Forensic Science and inform about the potential of scientific evidences present at the scene of crime helping in solving the crime.

Through there are numbers of books written on the subject by the Indian and Foreign authors but this book was written in a concise and precise manner exclusively for the purpose of the investigating officers working in the various investigative agencies or laboratories.

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The view and opinion expressed in the book are those of the authors and do not necessarily represent those of the FSL, Madhuban or any other Government agency.

Though much care has been taken in choosing the topics, expressing the views and selecting the photographs, however any error or short coming due to any reasons are of course, ours.

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CHAPTER-1

FORENSIC SCIENCE

1.1 Forensic Science definition

Forensic science (often shortened to forensics) is the application of a broad spectrum of sciences to answer questions of interest to a legal system. This may be in relation to a crime or a civil action. The word *forensic* comes from the Latin *forēnsis*, meaning "of or before the forum." In Roman times, a criminal charge meant presenting the case before a group of public individuals in the forum. Both the person accused of the crime and the accuser would give speeches based on their sides of the story. The individual with the best argument and delivery would determine the outcome of the case. This origin is the source of the two modern usages of the word *forensic* – as a form of legal evidence and as a category of public presentation.

In modern use, the term "forensics" in the place of "forensic science" can be considered correct as the term "forensic" is effectively a synonym for "legal" or "related to courts". However the term is now so closely associated with the scientific field that many dictionaries include the meaning that equates the word "forensics" with "forensic science".

The word "Forensic" also means belonging to courts of justice or to public debate. Therefore, Forensic Science in broader sense can be defined as that of science which involve the applications of scientific methods/techniques for the purpose of justice. It is the scientific discipline which is related to the recognitions, identifications, individualizations and evaluations of the clues/physical evidences for the purpose of justice. Thus, Forensic Science encompasses all the branches of natural and physical sciences, borrows their techniques and methods of administrations of criminal justice.

However in recent years few of the disciplines evolved specially for Forensic Science like DNA typing, Brain mapping, Lie detection and Nacro analysis etc. In simplest form of Forensic Science borrows the techniques from the basic science and applies them in solving the crimes. Thus, Forensic Science is the application of Science to laws.

1.2 History of Forensic Science

The discipline of Forensic Science is as old as human civilization. Crime in one or other form has been present since the beginning of the human civilization. It is the methods and techniques of commission of crime which are going to change year by year. The oldest evidence show in that some what around 19th Centaury and natural science began to develop. The fictitious character Sherlock Holmes of Sir Arthur Conan Doyle in the novel. "A study in Scarlet" published in 1882 popularized the scientific method in solving the crime.

For centuries justice was based on oral testimony of the unwilling and hostile witnesses. In the 19th Centaury Forensic science started providing scientific assistance in solving crimes. The history of Forensic science is divided into two main age period.

1.2.1 Antiquity and the Middle Age

The ancient world lacked standardized Forensic practices, which aided criminals in escaping punishment. Criminal investigations and trials relied on forced confessions and witness testimony. However ancient sources

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contain several accounts of techniques that foreshadow the concepts of forensic science that is developed centuries later, such as the "Eureka" legend told of Archimedes (287–212 BC). The account about Archimedes tells of how he invented a method for determining the volume of an object with an irregular shape. According to Vitruvius, a votive crown for a temple had been made for King Hero II, who had supplied the pure gold to be used, and Archimedes was asked to determine whether some silver had been substituted by the dishonest goldsmith. Archimedes had to solve the problem without damaging the crown, so he could not melt it down into a regularly shaped body in order to calculate its density.

The first written account of using medicine and entomology to solve (separate) criminal cases is attributed to the book of Xi Yuan Lu (translated as "Washing Away of Wrongs"), written in Song Dynasty China by Song Ci (1186–1249) in 1248. In one of the accounts, the case of a person murdered with a sickle was solved by a death investigator who instructed everyone to bring his sickle to one location. (He realized it was a sickle by testing various blades on an animal carcass and comparing the wound.) Flies, attracted by the smell of blood, eventually gathered on a single sickle. In light of this, the murderer confessed. The book also offered advice on how to distinguish between a drowning (water in the lungs) and strangulation (broken neck cartilage), along with other evidence from examining corpses on determining if a death was caused by murder, suicide or an accident.

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