

Critical Analysis of Dynamics of Medico-Scientific Evidence in Indian Evidence Jurisprudence

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17. State of U.P v. Mushtaq Alam, 2007 SCC 11 215
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19. State v. Sushil Sharma Petitioner. 2007 CRILJ 4008
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RESEARCH PAPER(S)

1. Development of Forensic Science and Criminal Prosecution-India.; Nivedita Grover, Isha Tyagi (2018);
2. *DNA evidence: current perspective and future challenges in India*, Sunil K Verma, Gajendra K Goswami

Critical Analysis of Dynamics of Medico-Scientific Evidence in Indian Evidence Jurisprudence

Abstract

Forensic Science in India finds its roots as early as 2250 years back in Kautilya's Arthashastra, where reference to use of **fingerprint**, i.e., Trija was made¹. Since then, Science has taken a paradigm shift with widely available tools and techniques developed in medicine and forensic science. This article examines the current position of India, and discovers the reasons behind lapses in effective administration of forensic science *on ground* in tandem with law enforcement agencies vis-à-vis other countries, along with analysis of legal framework enabling forensic science as a part of criminal proceedings, its admissibility, validity and use of forensic science by courts with respect to fundamental rights in light of varying case laws, textual authorities of medical science and jurisprudence.

Part I deals with Introduction to Forensic Science and developmental jurisprudence across various countries, with development of forensics in India in a historical perspective on scientific and legal front.

Part II deals with the procedural aspect of incorporating Medical Forensics as a part of investigation, concurrent analysis with United States of America has been made to analyse how Indian procedural system can be improved taking example of Aarushi Talwar murder case².

Part III elaborates on Forensics, its components and enabling legal provisions providing evidentiary value to the report(s) and/or medical professions with their legal validity examined vide precedent cases of apex court with analysis of Fingerprint and DNA as evidence in light of multiple case studies like Tandoor Kand case³.

Part IV of the research examines legal provisions of forensic evidence in investigation and evolution of Article 20 (3), right against self-incrimination vis-à-vis cases. Further challenges to DNA theft and forging in light of negative developments in science along with suggestions of Malimath Committee has been examined.

¹ Nivedita Grover, Isha Tyagi (2018); Development of Forensic Science and Criminal Prosecution-India.; Int J Sci Res Publ 4(12) (ISSN: 2250-3153). <http://www.ijsrp.org/research-paper-1214.php?rp=P363493>

² Nupur Talwar v Central Bureau of Investigation, MANU/SC/0009/2012

³ State v. Sushil Sharma Petitioner. 2007 CRILJ 4008

Research Methodology

Doctrinal Research based on secondary data has been used for the purpose of investigating and analysing dynamics of forensic science, and medical evidences forming a part of criminal investigation. Secondary data referred is/are research papers in the field of law and forensics, scholarly articles, reference materials and online databases.

Research Question

1. Understanding the current Medico-Legal Procedural and Evidentiary system (to);
2. Find Lapse(s) and Flaw(s) with respect to application of Forensic Sciences in Investigation(s) in India.
3. Examining Validity & Admissibility of Forensic Evidence in Justice System

Review of Literature

Medical Jurisprudence and Toxicology by Dr. K.S. Narayan Reddy⁴ provides the dynamics of legal procedures and guidelines for medical officers involved in forensic evidence collection. It further elaborates the development of Forensic Science in India and how the forensic evidence can play an important role in criminal investigation along with its evidentiary value in courts of law.

*Modi's, A Textbook of Medical Jurisprudence and Toxicology*⁵, one of the most authoritative reference material in Forensic Jurisprudence provides for the methodology of presentation of medical evidence in court along with comparative analysis with Germany, it also states how the evolution in legal and scientific domains of Forensic Science took place in India, substantiated with case laws on aspects of evidentiary value of Medical Officer(s) as Expert Evidences and Admissibility of Forensic Evidence.

*Nandy's Principle's of Forensic Medicine: Including Toxicology*⁶ states how the legal procedure is followed in cases where Medical Evidence is part of inquest and guidelines to be followed by Medical Officers involved in light of legal provisions.

Genetic Testing and the Criminal Law by Don Chalmer's⁷ is comparative analysis of Genetic Testing and Forensic Medicine in Criminal law of various countries especially those having similar legal system to that of India.

⁴ K S Narayan Reddy, *Medical Jurisprudence and Toxicology* (4th edn., ALT Publications 2018)

⁵ Modi, K. Kannan, *A Textbook of Medical Jurisprudence and Toxicology* (26th edn., Lexis Nexis 2016)

⁶ Apurba Nandy, *Principles of Forensic Medicine* (3rd edn., NCBA 2009)

⁷ Don Chalmers, *Genetic Testing and the Criminal Law* (1st edn., Routledge-Cavendish 2005)

*Law of Evidence by Jethmalani & Chopra (Volume I)*⁸ provides for reference to Section 73, Expert Evidence and law with respect to Self-Incrimination which are useful for the current research paper.

*Errors in Medicine & Law by McCall Smith*⁹ provides suggestive analysis of developmental forensic science and how lapses can be covered along with international analysis of jurisprudence developed in light of gaps in medical science.

*Sunil K.Verma (Principal Scientist, CSIR) , Gajendra K. Goswami, I.P.S. (Director, CBI Academy), DNA Evidence: Current Perspective and Future Challenges in India, Forensic Science International*¹⁰ provides for challenges to Indian Forensic Science and how it is being current used and developed in legal system with an analysis of its effective use in Indian Judicial System.

“ Part I - Introduction to Forensic Science

Forensic or legal medicine i.e., the knowledge of medicine to be applied in the courts of law. It deals with application of medical knowledge to aid in the administration of justice. Medicine and law have found to be intertwined since the earliest times. The law and medicinal problems are found in written records in India, China, Egypt and Babylon dating as early as 3000 B.C.

One of the earliest legal documents: the Code of Hammurabi can said to have contained the earliest provisions of medico-legal knowledge. In Criminal jurisprudence as early as 16th century, the Penal Code of Bishop of Bamberg and the Caroline Court both increased the importance of legal medicine by their insistence that medical testimony was an essential part of proof in trials.

Chronology of Rise of Forensic Science in India

1849	The first Chemical Examiner's Laboratory was, therefore, set up for this purpose at the then Madras Presidency, under the Department of Health.
1853, 1864, 1870	Similar laboratories were set up at Calcutta (1853), followed by one each at Agra (1864) and Bombay (1870).

⁸ Ram Jethmalani, DS Chopra, *The Law of Evidence (Volume 1, Thomson Reuters 2013)*

⁹ Alan Merry, Alexander McCall Smith, *Errors, Medicine and the Law* (1st Edn., Cambridge University Press 2013)

¹⁰ Sunil K Verma, Gajendra K Goswami, *DNA evidence: current perspective and future challenges in India* (<http://dx.doi.org/10.1016/j.forsciint.2014.05.016>)

	These laboratories were equipped to handle toxicological analysis of viscera, biological analysis of stains of blood, semen, etc. and chemical analysis of food, drugs, and various excisable materials to provide scientific support to the criminal justice delivery system within their limited means. These laboratories also provided analytical facilities to the neighbouring States and Union Territories.
1898	The foundation of the Department of Explosives was laid when the first chief inspector of explosives, with his headquarters at Nagpur. Later, five regional offices at Calcutta, Bombay, Agra, Madras and Gwalior, and three sub-offices at Sivakasi.
1905	The first Central Finger Print Bureau (CFPB) in India was established at Shimla.
1910	Institute named as Serology Department' was established in Calcutta.
1915	Footprint Section was established under the CID, Government of Bengal, which helped the police authorities to identify criminals through the examination of footprints collected from the scene of crime.
1917	Note Forgery Section was set up under the CID, Government of Bengal, to undertake the examination of forged currency notes.
1930	An Arms Expert was appointed and a small ballistic laboratory was set up under the Calcutta Police to deal with the examination of firearms
1936	Scientific Section was set up under the CID in Bengal and facilities were created for examination of bullets, cartridge cases, firearms, etc., used in committing crime
1952	The first state forensic science laboratory in India was established at Calcutta. This laboratory became fully operational in the year 1953
1956	CDTS, Calcutta, a premier detective training school in India, was established (Central detective training school at Calcutta)
1957	The first Central Forensic Science Laboratory was established at Calcutta. To begin with, this laboratory was organized into four basic disciplines viz. Forensic Physics, Forensic Chemistry, Forensic Biology and Forensic Ballistics.

1964	The Central Detective Training School, Hyderabad was established on the pattern of the CDTs, Calcutta, followed by another one at Chandigarh, during 1973.
1971	The Institute of Criminology and Forensic Science (ICFS) was established in Delhi with the limited objectives of imparting training to the in-service personnel and conducting research in Criminology and Forensic Science.

Part II - Initiation of Medicolegal Evidential Process

In case of death of a person, it is essential for the process of law to ascertain whether such death was natural or unnatural to meet with requirements of law. In case of a natural death there is no further legal procedure involved, but death due to an unnatural or suspicious cause are to be reported to the authority and the process of inquest begins, to apprehend and punish the criminal. The work of medicolegal professional involving forensic science begins from autopsy of the body and examination of evidences related with it.

Comparative Analysis of Indian Medicolegal Process with United States of America

United States has arguably one of the most advanced jurisprudences of Medical Examiner System, whereby on the commencement of inquest itself medical examiners certified by applicable board who are eligible forensic pathologists accompany the law enforcement agency, to gather first-hand evidence and gain all the relevant information which is required in precise exactitude for their medicolegal forensic analysis. This system is superior to other system where non-medical personnel conduct the inquest and they themselves collect the evidence which has a huge possibility of corrupting the evidence, if not handled with care. Further, these medical personnel submit their report to district attorney for further action.

To contextualise the lapse of forensic science in India in collecting evidence vis-à-vis the U.S. system of examination, the case of Aarushi Talwar¹¹ (Noida Double Murder Case), a lot of evidence with respect to blood-spats, DNA profiling and other key evidence got completely unusable by the courts and by the medicolegal professionals due to multiple policemen and other persons having interfered with the biological material and the same being perished and/or corrupted. Only if a system similar to the Medical Examiner System of the U.S. would have

¹¹ Supra Note 2

been in place, the forensic evidence could have been better utilised for furtherance of meeting ends of justice.

Part III - Importance of Medical, Forensic and Toxicological Evidence in Judicial System

Apex Court in *State of U.P v. Mushtaq Alam*¹², subsequently upheld in *Sunil Chandra v. State*¹³, held that the medical evidence has a great corroborative value, it proves that injuries could have been caused in the manner alleged and death could have been caused by the injuries, so that the prosecution case being consistent with matters verifiable by medical science, there is no reason why eye-witnesses should not be believed.

Supreme Court in *Mayur Pannabhai Shah v. State of Gujarat*¹⁴, also noted that, “Our courts have always taken the doctors as witness of truth.” Further in *Shivaji v. State of Maharashtra*¹⁵, the Supreme Court stated that the court must not abandon a scientific attitude to medical science if it is not guilty of judicial superstition.

Value of Medical Evidence in Criminal Trials

The Supreme Court in the case of *Chimanbhai Ukabhai v. State of Gujarat*¹⁶, held that evidence of a medical person is merely an opinion which leads corroboration to direct evidence in the case. The value of medical evidence is only corroborative. In *State of U.P. v. Krishna Gopal*¹⁷, it was observed that it is a trite that where the eye-witness’s account is found credible and trustworthy, medical opinion pointing to alternative possibilities is not accepted as conclusive.

From the evidence on record, inferences are drawn as to the truth or otherwise of the prosecution case in criminal matters, and truth or otherwise of a claim in civil matters. In this process, the medical evidence plays a very crucial role. If there is inconsistency or discrepancy between the medical evidence and the direct evidence or between medical evidence of two doctors, one of whom examined the injured person, and the other conducted post-mortem on the injured person after his death or as to the injuries, or the weapon used, or the time of the incident, then in criminal cases, the accused is given the benefit of doubt, and let off. Where the direct testimony is found untrustworthy, conviction on sole medical evidence can be done,

¹² *State of U.P v. Mushtaq Alam*, 2007 SCC 11 215

¹³ *Sunil Chandra v. State*, 2015 SCC ONLINE TRI 437

¹⁴ *Mayur Pannabhai Shah v. State of Gujarat*, 1983 AIR SC 66

¹⁵ *Shivaji v. State of Maharashtra*, 2012 SCC ONLINE BOM 428

¹⁶ *Chimanbhai Ukabhai v. State of Gujarat*, 1983 AIR SC 484

¹⁷ *State of U.P. v. Krishna Gopal*, 1988 SCC CRI 928

if that is trustworthy. Conviction results, if the medical evidence corroborates the direct evidence. So, the fate of an accused hangs on the medical evidence, whether it is a case of murder, rape, grievous injury, kidnapping, abduction.

Components of Medico-Legal Evidence

- a. Forensic accounting is the study and interpretation of accounting evidence.
- b. Forensic aerial photography is the study and interpretation of aerial photographic evidence.
- c. Computational forensics is the development of algorithms and software to aid in forensic investigation.
- d. Criminalistics is the examination and comparison of biological evidence, trace evidence, impression evidence (such as fingerprints, footwear impressions, and tyre tracks), controlled drugs, ballistics, firearm and tool mark inspection, and other evidence in criminal investigations. At most cases, evidence is processed in a crime lab.
- e. The examination of fingerprints is known as forensic dactyloscopy.
- f. Digital forensics is the use of scientific methodologies and procedures to recover data from electronic or digital media. Digital forensic specialists work both in the field and in the lab.
- g. Forensic document examination, also known as questioned document examination, uses a variety of scientific processes and methodologies to address questions regarding a disputed document. Many investigations entail comparing the questioned document or its components to a set of known standards. The most typical sort of assessment is handwriting, in which the examiner attempts to resolve any authorship concerns.

Evidentiary Value of Medical Evidence

Inconsistency between Direct Evidence and Medical Evidence

It is considered a defect in case of prosecution if there exists inconsistency between direct and medical evidence as held in *Piara Singh v. State of Punjab*¹⁸, but it is also considered that the testimony of eye-witnesses cannot be thrown out on the ground of alleged inconsistency with the medical evidence, in words of Bentham, “Witnesses are the eyes and ears of Justice; hence the importance and primacy of the orality of trial process”¹⁹.

¹⁸ *Piara Singh v. State of Punjab*, 1969 AIR SC 961

¹⁹ *Supra*

In an exemplary case of *Purshottam v. State of Madhya Pradesh*²⁰, the prosecution witnesses showed that three separate blows were given to the deceased, on the contrary in post-mortem report by medical officer only one wound was found which, in his opinion was a result of two simultaneous blows unlike the story of prosecution witness. The court relying on medical evidence opined that it was impossible to give three blows from different directions in such a precision that causes a single wound, thereby holding that the version of prosecution witness with regard to this vital fact was inherently improbable and intrinsically incredible. **The ocular account of the occurrence was falsified by the medical evidence.** Further, in *Ram Narain v. State of Punjab*²¹ and *Amar Singh v. State of Punjab*²², it was held that if the evidence of prosecution witness is totally inconsistent with medical evidence, it is fundamental defect of prosecution case and unless reasonably explained it is sufficient to **discredit the entire case.**

Further, the harmoniously constructing the alternatives in medical evidence vis-à-vis direct evidence, the Supreme Court in *Anil Rai v. State of Bihar*²³, held that:

1. If direct evidence is satisfactory and reliable, the same cannot be rejected on hypothetical medical evidences.
2. If medical evidence when properly read, and it shows two alternate possibilities and not any inconsistency, the one consistent with reliable and satisfactory statements of the eye-witnesses has to be accepted.

Balance of Medical Evidence on Side of Prosecution and Accused

In *State (Delhi Administration) v. Gulzari Lal*²⁴, Supreme Court was faced with the question that in a case where medical evidence is equally balanced on both sides, the benefit of doubt must be given to the accused, therefore the Supreme Court refused to interfere with the order of acquittal recorded by High Court.

Medical officer(s) as witness

Section 45 of the Indian Evidence Act²⁵ provides for an expert as a witness who has professional expertise of the subject matter. Section 45²⁶ intertwined with Section 15 (2)(c)²⁷

²⁰ *Purshottam v. State of Madhya Pradesh*, 2019 SCC ONLINE MP 599

²¹ *Ram Narain v. State of Punjab*, 1997 RCR CRIMINAL 4 251

²² *Amar Singh v. State Of Punjab* , 1992 CRIMES 2 112

²³ *Anil Rai v. State of Bihar*, 2002 BOMCR SC 3 36

²⁴ *State (Delhi Administration) v. Gulzari Lal*, 1979 CRI LJ 1057

²⁵ Indian Evidence Act, 1872, § 45

²⁶ Indian Medical Council Act, 1956, § 15 (2) (c)

²⁷ *Supra*

of the Indian Medical Council Act, 1956 which provides that, on any matter relating to medicine, no other person than a medical practitioner enrolled on state record shall be entitled to give evidence as expert under section 45²⁸.

In order to provide safeguards to medical professionals and allay their apprehensions, the Supreme Court in *Pt. Parmananda Katara v. Union of India*²⁹ vide para 16 laid down the following guidelines:

1. The law enforcement agencies must not unnecessarily harass for interrogation or any formality, members of medical fraternity and summoning them to police stations must be avoided.
2. The courts of law shall not summon a medical professional unless evidence is necessary and in case of such summon, the time of such medical professional must be taken into paramount consideration, so as to not make them wait unnecessarily.
3. When the facts are clear, unnecessary harassment by requests of cross-examination or adjournments must be avoided.

Part IV - Legal Provisions of Forensic Evidence in Investigation

Article 20(3) of the Indian Constitution provides for 'Right against self-incrimination' and is a protective umbrella against testimonial compulsion to witness against one's own self. Sir James F. Stephen, in *History of Criminal Law*³⁰ stated that, no less serious is the danger that some accused persons at least may be induced to furnish evidence against themselves which is totally false: out of sheer despair and anxiety to avoid unpleasant present. The constitutional makers were aware of this and placed Article 20(3)³¹ to safeguard such persons.

Section 73³² of Indian Evidence Act gives authority to the court to direct any person including an accused to allow his fingerprints to be taken and that it does not violate constitutional safeguards given under Article 20(3)³³. The question of abrogation of fundamental rights arose in multiple cases as follows:

²⁸ Indian Evidence Act, 1872, § 45

²⁹ *Parmananda Katara v. Union of India*, 1995 SCC CRI 464

³⁰ James Fitzjames Stephen, *History of Criminal Law of England* 1883

³¹ India Const., Article 20(3)

³² Indian Evidence Act, 1872, § 73

³³ India Const., Article 20(3)

1. State of Bombay v. Kathi Kalu Oghad³⁴ (Supreme Court of India)

It was held that taking thumb impressions, specimen signature, blood, hair, semen etc. from accused does not amount to 'being a witness' within the meaning of said Article, therefore accused has no right to object to DNA examination for purpose of investigation and trial.

2. Ram Chandra Reddy v. State of Maharashtra³⁵ (Bombay High Court)

The legality of P300 or Brain Scan, Lie Detector Test and Narco analysis was upheld in the case of Telgi scam including the main accused Abdul Kareem Telgi.

3. Selvi & Ors. v. State of Karnataka³⁶ (Supreme Court of India)

On the question of legitimacy of involuntary administration of certain scientific techniques, the Supreme Court held that brain mapping and polygraph test were inconclusive and their mandatory usage in Criminal Investigation would be unconstitutional.

Legal Provisions in Usage of Fingerprint(s) & DNA as Forensic Evidences

Tandoor Murder Case³⁷

This was the first criminal case in India solved by the help of forensics. In this case Sushil Sharma murdered his wife at home by firing three bullets in to his wife Naina Sahni's body. He killed his wife believing that she had her love affair with her classmate and fellow congress worker Matloob Karim. After murdering his wife Sharma took her body in his car to the Bagiya restaurant, where he and restaurant manager Keshav Kumar attempted to burn her in a tandoor there. Police recovered Sharma's revolver and blood-stained clothes and sent them to Lodhi Road forensic laboratory. They also took blood sample of Sahni's parents, Harbhajan Singh and Jaswant Kaur and sent them to Hyderabad for a DNA test. According to the lab report, "Blood sample preserved by the doctor while conducting the post mortem and the blood stains

³⁴ State of Bombay v. Kathi Kalu Oghad, 1962 BOMLR 64 240

³⁵ Ramchandra Ram Reddy Others v. The State Of Maharashtra 2004 ALLMR CRI 0 1704


³⁶ Selvi & Ors. v. State of Karnataka, 2013 JT 13 176

³⁷ State v. Sushil Sharma Petitioner. 2007 CRILJ 4008

on two leads recovered from the skull and the neck of the body of deceased Naina are of 'B' blood group." Confirming that the body was that of Sahni, the DNA report said, "The tests prove beyond any reasonable doubt that the charred body is that of Naina Sahni who is the biological offspring of Mr. Harbhajan Singh and Jaswant Kaur." And finally, Mr. Shusil Sharma was found guilty with the help of forensic evidences.

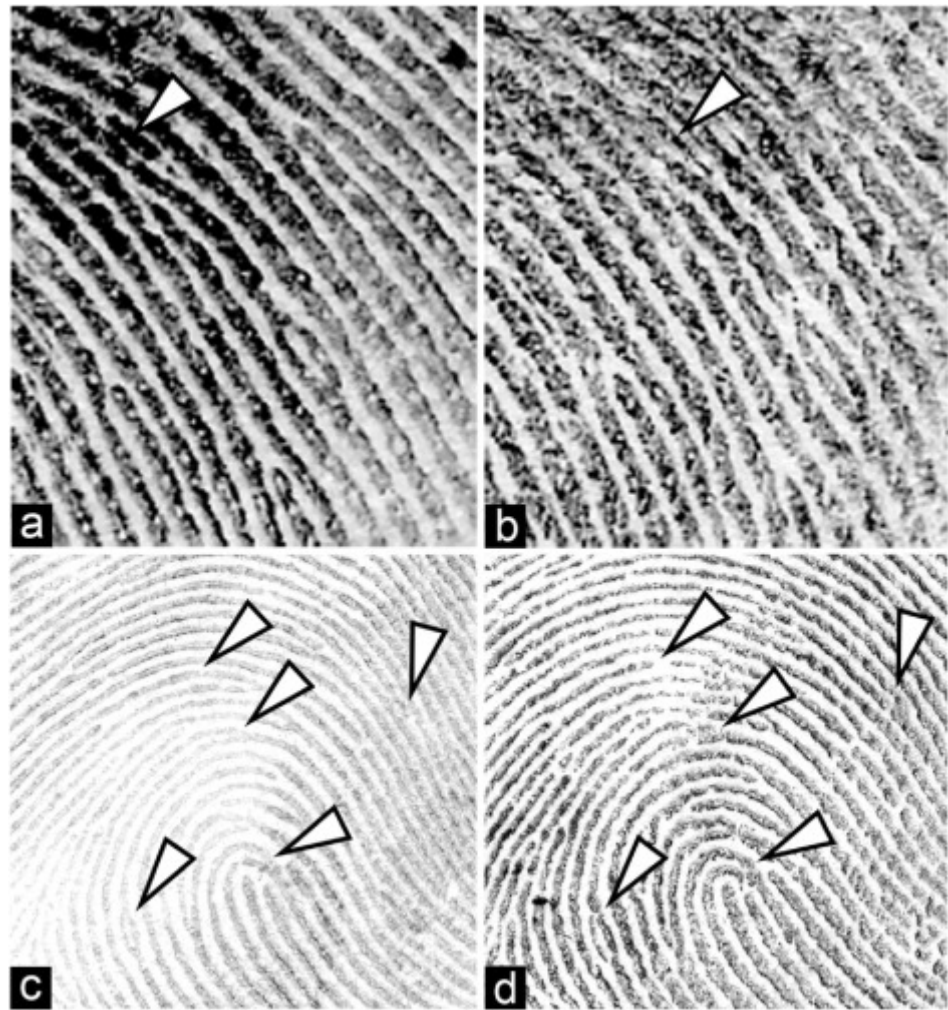
Fingerprints

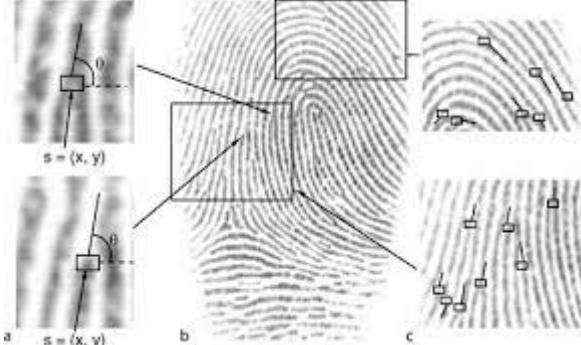
The identification of criminals through fingerprints was the first important break-through in the scientific investigation of crime. As usual, the judiciary and the public took some time to believe in the utility of fingerprints as a scientific aid.³⁸ The same is now recognized throughout the world. The importance of fingerprints in criminal investigation is immense, because they are:"

Unique	<p>Ridge pattern of each finger has individuality. The patterns vary not only from one individual to another, but they are different in the same individual on each finger. Duplication of pattern has never been observed. Nor the same is expected.</p> <div data-bbox="443 1115 1066 1435">  <p>LOOPS WHORLS ARCHES</p> </div>
Permanent	<p>The fingerprints of an individual do not change throughout his life. In fact, the ridges appear before birth. They start appearing during third or fourth month of pregnancy. They remain even after the death of the individual ever till the epidermal skin is destroyed by fire, putrefaction or is eaten by insects or other creatures.</p> <p>In a murder case the body of the victim was partially burnt and buried. The same was discovered many days after the murder. The body was completely disfigured and could not be identified. The investigating officer got removed the remaining skin pieces from the tips of the fingers</p>

³⁸ Modi, K. Kannan, A Textbook of Medical Jurisprudence and Toxicology (26th edn., Lexis Nexis 2016)

through a doctor. He sent them to fingerprint bureau along with the one authentic print of the deceased available on his will. The bureau confirmed the identity of the deceased. The digital skin pieces were recovered and sent to the finger print bureau. The fingerprints of the deceased tallied with the fingerprints of the convict, available in the records, the permanence of fingerprints permits identification of an individual even after many years, if his finger print record is available. Many criminals have been identified through this medium after years of absconding



	
Universal	<p>All individuals and hence all criminals carry this medium of identification. The finger digits and surface of the hands carry the friction ridges. The fingers have more intricate patterns. They allow easier individualization and classification. A criminal uses his hands in the commission of crime. He leaves marks at the scene of occurrence or on the objects which come in contact in the commission of crime. There are fair chances of occurrence of finger prints, therefore in all types of crime.</p>

“In the case of **Bazari Hajam v. King Emperor**³⁹; the dilemma arose as to whether it is safe to act on the uncorroborated testimony of the fingerprints and proclaim the prisoner guilty.

Bucknill, J., stated on this point: "I think that aside from the fact that I would be rather sorry without any corroborative circumstances to convict a person of a serious crime solely and entirely on similarity of thumb marks or finger prints, the very fact of taking a thumb-impression from an accused person for the purpose of possible manufacture of evidence by which he could be incriminated is sufficient to warrant one in setting aside the evidence."⁴⁰

The above viewpoint was rejected by Schwabe, C.J. in **Public Prosecutor v. Kandasami Thevan**,⁴¹ despite the fact that the issue did not directly arise in the case because there were thumb-impressions of the accused in evidence other than those taken by the judge in court for comparison with the thumb-impressions in the allegedly forged document.

Challenge of DNA Theft and Forging

The phenomenon of DNA theft followed by forge and intentional planting at the scene of crime is alone sufficient to prove that the DNA profile is not ‘beyond a reasonable doubt evidence’ to imply in the criminal justice system. DNA theft, also known as gene-napping or genetic

³⁹ Bazari Hajam v. King Emperor 1921 SCC ONLINE PAT 91

⁴⁰ Ibid

⁴¹ Public Prosecutor v. Kandasami Thevan, 1928 LW 27 184

identity theft has been discussed to some extent in scientific literature in recent past. However, the legal scholars and legislators, in particular the promoters of DNA Forensics have largely ignored this issue. The DNA theft is not a crime (or even a civil violation for that matter) in most western jurisdictions and it is virtually unconstrained by law. Here the problem is that once planted at the scene of crime, the DNA evidence (and DNA profiling) itself cannot infer whether it is a real one or the forged, fabricated and intentionally planted one. The possibilities of DNA theft followed by forgery and intentional planting at the scene of crime has neither been denied by science⁴² nor by law as evident from at least few exposed cases from west. In this view, it seems to be unwise to believe that criminals have not abused (and will not continue to abuse) the judicial system at a bigger scale than reported. This imply that the criminal courts need to be extremely careful while accepting the DNA evidence to prove guilt or innocence; particularly in the cases where the DNA evidence proposes tracing back a forensic stain to a person sharing the stain's DNA profile. In the current changing scenario in India, the upcoming DNA scams are undoubtedly going to create more challenges by raising questions on the reliability of DNA evidence in the criminal prosecutions. In the United Kingdom, the DNA theft has been announced as a crime⁴³; however, it is also clear that stealing someone's DNA is the simplest and easiest thing in the current times due to advancement of technologies where the DNA can be isolated even from the fingerprints. Not only this, it has also been demonstrated that the specific DNA profiles of target individuals (such as celebrities, famous political figures and personal enemies) could also be forged and artificially created in the laboratories by simple cloning procedures which could then be planted at the scene of crime. The term like 'stalking' and 'voyeurism' are not alien to the world of genetic evidence which poses serious challenges before the judicial acumen. Unfortunately, in India the legislation to deal with the issues pertaining to 'DNA theft' or DNA Forgery does not exist and no concern have been raised so far either by forensic scientists, legal scholars, legislators or judiciaries on this specific issue.

Suggestions of Malimath Committee Report

1. Well-equipped laboratories should be established to handle and conserve DNA samples and evidence.
2. Legal reform to give guidelines to the police setting uniform standards for obtaining genetic information and creating adequate safeguards to prevent misuse of the same.

⁴² Sunil K Verma, Gajendra K Goswami, DNA evidence: current perspective and future challenges in India (<http://dx.doi.org/10.1016/j.forsciint.2014.05.016>)

⁴³ Ibid

3. Creation of a national DNA database, which will be immensely helpful in the fight against terrorism.
4. Sec. 313 of the CR.P.C must also be amended so as to draw adverse inference against the accused if he fails to answer any relevant material against him therefore, making it easy for the law enforcers to use DNA tests against him.”

CONCLUSION

Forensic Medicine has existed in India as well as countries like China, Japan and Egypt since time in memorial, but with the rise of Science and Forensic techniques, the law (especially in India) has not kept pace with developments of science, primarily in terms of procedurally aspect. Author(s) have analysed procedure of Medical Examiner System of the United States vis-à-vis and lapses in Indian system with contextual example of Aarush Talwar murder case.

Importance of the current medical, forensic and toxicological evidence in Indian Judicial System has been examined in light of various cases of Supreme Court of India further analysing the value of medical evidence in criminal trials and where the balance of favour lies in favour of accused if in contrary opinion of medical officers, one has to be accepted.

Further, development in jurisprudence of Article 20 (3)⁴⁴ Right Against Self Incrimination vis-à-vis scientific evidence has been examined with the final authority in Selvi Case⁴⁵ been laid where the Supreme Court held that brain mapping and polygraph test were inconclusive and their mandatory usage in Criminal Investigation would be unconstitutional.

In the final part, the technicalities of fingerprinting and DNA have been examined with challenge(s) to DNA Theft and Forging vis-à-vis other countries have been examined along with analysis of recommendations of Malimath Committee with respect to medical evidence.

There is an unanimity that medical and forensic evidence plays a crucial role in helping the courts of law to arrive at logical conclusions. Therefore, the expert medical professionals should be encouraged to undertake medico legal work and simultaneously the atmosphere in courts should be congenial to the medical witness. This attains utmost importance looking at the outcome of the case, since if good experts avoid court attendance, less objective professional will fill the gap, ultimately affecting the justice. The need to involve more and more professionals in expert testimony has been felt by different organizations. Though many

⁴⁴ India Const., Article 20(3)

⁴⁵ Supra

plans have been brought before the ministry of Home Affairs which includes formation of Forensic Council where not only the Evidence Act but the Information Technology Act and The Code of Criminal Procedure will become complementary to the Science.