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Legal dimensions of forensic science in India

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Abstract

Scientific advances already play an important role in solving crimes. Labs can analyze smaller pieces of evidence than ever before, and law enforcement officials can gain valuable information from evidence that, in the past, would have been degraded and unusable due to weathering or time. New technology also allows investigators to find and analyze evidence that they would likely not have found via earlier methods. The medical evidence, being the expert opinion, assists the Court on the technical aspect of the case by explaining the terms of science. However, a doctor who has examined the victims is in the best position to depose about the medico-legal aspects of the offence committed on the victim. The medical evidence is corroborative and consistent with the direct and circumstantial evidences, then it can be considered without hesitation. To decide the legitimacy of the child, the Court can rely on medical evidence. In most of the rape cases, the sperms ejected by the accused on the private parts of the victims is taken for chemical analysis which can help the Court to come to the proper conclusion.

However, the importance of the medical or forensic evidence, it's not having any value unless it's been recognized by the law. In India, the human rights of individual are at most importance and it's been recognized under the India Constitution. Under Article 20, 21 and 22 the rights of the accused are protected and the same is the major hurdle in application of laws favoring forensic evidences. Furthermore, the age-old code of criminal procedure and the Indian evidence act do not provide for appropriate legal status to forensic science in the criminal justice process, it should be updated meeting the needs of an hour and specific laws governing the forensic science should be passed.

Keywords: forensic science, criminal investigations, forensic dimensions, forensic evidence, medical jurisprudence, Indian evidence Act, Indian constitution, criminal procedure code, Indian penal code, criminal investigation and trials

1. Introduction

Medical Jurisprudence is the old science which was in used for the new terminology of forensic science and already certain provisions relating to legality of documentary evidence such as medical certificates, medical reports, dying declaration, hospital records like admission/discharge register, birth/death certificates etc. are existing in several concerned laws. Though the documentary evidences are dead proof of the fact, but medical evidences in criminal cases like murder, rape & assault are worth valuable evidence.

Scientific advances already play an important role in solving crimes. Labs can analyze smaller pieces of evidence than ever before, and law enforcement officials can gain valuable information from evidence that, in the past, would have been degraded and unusable due to weathering or time. New technology also allows investigators to find and analyze evidence that they would likely not have found via earlier methods. In some instances, such a comparison could provide investigative leads associating a suspect or victim with a crime scene. Investigators can now use DNA and other evidence collected and stored decades ago to help identify and convict criminals who have eluded authorities for years and to exonerate prisoners who were wrongly convicted before today's more sophisticated methods became available.

The medical evidence, being the expert opinion, assists the Court on the technical aspect of the case by explaining the terms of science. It is well settled that the medical jurisprudence is not an

exact science and it is indeed difficult for any doctor to say with precision and exactitude as to when a particular injury was caused. However, a doctor who has examined the victims is in the best position to depose about the medico-legal aspects of the offence committed on the victim. The medical evidence is corroborative and consistent with the direct and circumstantial evidences, then it can be considered without hesitation. To decide the legitimacy of the child, the Court can rely on medical evidence. Where a person is killed and burnt or buried, by the remnants of the decomposed or burnt body of the deceased, the identity and other facts can be detected which helps the investigating agencies to trace the truth and find other evidences. In most of the rape cases, the sperms ejected by the accused on the private parts of the victims is taken for chemical analysis which can help the Court to come to the proper conclusion.

However, the importance of the medical or forensic evidence, its not having any value unless its been recognized by the law. In India, the human rights of individual are at most importance and it's been recognized under the India Constitution. Under Article 20, 21 and 22 the rights of the accused are protected and the same is the major hurdle in application of laws favoring forensic evidences.

Furthermore, the age-old code of criminal procedure and the Indian evidence act do not provide for appropriate legal status to forensic science in the criminal justice process. Criminal Procedure Code and Indian Evidence Act 1872 are the parent

procedural laws which govern criminal trials in India, while Criminal procedure Code prescribes the procedure from the point of taking cognizance of crime by appropriate judicial Magistrates till the delivery of final order of Conviction or acquittal or any appropriate order looking into the fact of the case. Indian Evidence Act is limited in its scope of leading evidences in civil or criminal cases either by the prosecution or defendant, applicant or respondent.

2. Expert Testimony: Admissibility in Court of Law

Law related to expert evidence is mentioned particularly in Section 45 to 51 of Indian Evidence Act and restricted to the interpretation of these sections only. The general rule is that the opinion of persons or the beliefs of the witnesses is not admissible in the Court. However, in the course of time, the law related to expert evidence has been developed with the rapid development of technology and with the help of judicial decisions.

Witnesses are ordinarily to testify the facts in their direct knowledge leaving it to the judge to form opinions, inferences, or conclusions on the basis of such facts. Witnesses are ordinarily not to say what they thought or believed to be and therefore their opinions are irrelevant in a judicial inquiry but in certain special matters requiring special skill in the subject concerned, opinions of persons having special study, training, or experience are accepted as evidence.

In cross-examination, the lawyer may try to prove the incompetence of the expert by putting questions relating to his qualifications, training, and experience. Expert evidence is covered under Section 45-51 of the Indian Evidence Act. Section 45 of the Act allows that when the subject matter of inquiry related to science or art, as to require the course of the previous habit or study and in regard to which inexperienced persons are unlikely to form a correct judgment.

It allows an expert to tender evidence on a particular fact in question, and to show to the court that his findings are unbiased and scientific. Section 46 of the Act states that facts not otherwise relevant, are relevant if they support or are inconsistent with the opinion of experts when such opinions are relevant. Section 47 of the Indian Evidence Act exclusively deals with the opinion as to the handwriting. The explanation further elaborates on the circumstances under which a person is said to have known the disputed handwriting. The expert opinion is not confined to handwriting alone. The opinions in relation to customs are also admissible according to S. 48 of Indian Evidence Act.

The data given by the expert are relevant and admissible. If any oral evidence contradicts the data/ report; it will not make the data evidence obsolete. But, as per section 46, in case any fact is in contradiction to the opinion of the expert, that fact becomes relevant. If the opinion of the expert is relevant, the contradictory fact becomes relevant even though it was not relevant as such. The value of expert opinion depends upon the facts on which he is based and the competency of such expert in forming a reliable opinion.

However, the personal appearance of the expert in the court can be excused unless the court expressly asks him to appear in person. In such a case, where the expert is excused, he can send any responsible officer who is well versed with the facts of the case and the report and can address the court with the same.

The evidence given by the expert is just an opinion and is not a fact-based testimony and thus are given slight value. This is the

reason that eye-witnesses or other factual witnesses are given a priority over the expert's opinion. This is because opinion evidence cannot supersede substantive evidence. No expert can claim that he could be absolutely sure that his opinion was correct, expert depends to a great extent upon the materials put before him and the nature of the question put to him.

Data evidence, it can't be rejected if it is inconsistent to oral evidence. In *Arshad v. State of A.P.* the Honorable High Court set the following precedent, Opinion evidence - it is only an inference drawn from the data and it would not get precedence over the direct eye-witness testimony unless the inconsistency between the two is so great as to falsify the oral evidence.

In *S.Gopal Reddy v. State of A.P.*, the court explained that Expert evidence is opinion evidence and it can't take the place of substantive evidence. It is a rule of procedure that expert evidence must be corroborated either by clear direct evidence or by circumstantial evidence. It is not safe to rely upon this type of evidence without seeking independent and reliable corroboration. The value of Medical evidence is only corroborative. A doctor acquires special knowledge of medicine and surgery and as such he is an expert. Opinions of a medical officer, physician or surgeon may be admitted in evidence to show:

- Physical condition of the a person,
- Age of a person
- Cause of death of a person
- Nature and effect of the disease or injuries on body or mind
- Manner or instrument by which such injuries was caused
- Time at which the injury or wounds have been caused.
- Whether the injury or wounds are fatal in nature
- Cause, symptoms and peculiarities of the disease and whether it is likely to cause death
- Probable future consequences of an injury etc.

Again, in *Mani Ram v. State of U.P.*, the court re-iterated the secondary nature of medical evidence and observed that when there is a conflict between the medical evidence and ocular evidence, oral evidence of an eye witness has to get primacy as medical evidence is basically opinionative.

Where the direct evidence is not supported by the expert evidence, the evidence is wanting in the most material part of the prosecution case and therefore, it would be difficult to convict the accused on the basis of such evidence. If the evidence of the prosecution witnesses is totally inconsistent with medical evidence, it is the most fundamental defect in the prosecution case and unless this inconsistency is reasonably explained, it is sufficient to discredit the evidence as well as the entire case. The court in *Piara Singh v. State of Punjab* astutely observed that where the opinion of one medical witness is contradicted by another and both experts are equally competent to form an opinion, the court will accept the opinion of that expert which supports the direct evidence in the case.

The Opinion of an expert must be of corroborative nature to the facts and circumstances of the given case. If the opinion contradicts an unimpeachable eyewitness or documentary evidence, then it will not have the upper hand over direct evidence. The Section does not provide for any specific attainment of knowledge or study or experience for, being called an expert. Experts are admissible as a witness but, they are not to make a conclusion as it is a judicial function.

In *Forest Range officer v. P. Mohammad Ali*, it was held that expert opinion is only the opinion evidence. It does not help the Court in interpretation. The mere opinion of an expert cannot override the positive evidence of the attesting witness. Expert opinion is not necessarily binding on the Court.

In *Muralila v. State of Madhya Pradesh*, it was held by the Supreme Court that there is no justification for condemning the opinion evidence of an expert to the same class of evidence as that of an accomplice and insist upon corroboration.

The court also stated that it would be a grave injustice to base a conviction solely on the opinion of handwriting expert or any other kind of expert, without substantial corroboration. An expert deposes and not decides. His duty is to furnish the judge with the necessary scientific criteria for testing the accuracy of his conclusion so as to enable the judge to form his own independent judgment by the application of these criteria to the facts proved in evidence.

2.1. Various Rules for Expert Opinion

The first rule is of expert educational background. That means even the doctor is examined and is subjected to scrutiny and cross-examination. And if his opinion and observations contained in his statement are supported, then the report can be looked at otherwise not. So, even the examination of a doctor becomes essential.

The second test is of the exhibits and the illustrations that the expert brings with him or makes. He should not base his opinion on the basis of memory and abbreviated notes. But he should have the opinion of such a level that even if there is expert evidence of the opposite party, then also, he is able to defend his stand.

The third test is of readiness to detail his techniques and procedures. An expert should not be of skillful nature to outlining the procedures that he has followed. And he should be so confident that no qualms can say that he has skipped procedures in reaching his own conclusions.

And the conclusive test is that an Expert is conservative and is cautious. It is a well-settled principle that the opinion of an Expert should be taken with great caution, and moreover, the decision should not be based simply on the basis of the opinion of an Expert, without a substantial corroboration, as it is unsafe otherwise. The opinion of an Expert by its very nature, weak, and infirm and in itself cannot of itself form the basis for a conviction and should be taken with great caution.

It is their duty of court not to occupy the role of an expert by themselves and S.C. has always deprecated the courts to take the role of an expert. But before applying the opinion of an expert, the court has to see to apply its own admitted or proved things and compare them with the disputed ones. And they have to verify the premises of the expert in one case and value the opinion in the other case.

When the direct evidence is well corroborated by the circumstantial evidence and conforms to probabilities, and there is no reason why it should not be accepted. The mere fact that the expert has come to a different conclusion on a particular point would not render that part of his story open to doubt, especially when the data on which the expert has come to that conclusion is insufficient. The data on which the expert weighs must weigh with the Court, and the opinion of the expert must be judged in the light thereof.

2.2. Opinion as to the foreign law

Law which is not in force in India is foreign law. In England, it can be proved by leading expert evidence. In India, it may be proved the same way under section 45 or by producing of official books and reports on foreign law u/s 38. Foreign law is, therefore, a question of fact. Hindu law and Mohamedan law are laws of the land, and it is the duty of the court to interpret the law of the land, and hence, the opinions of experts, however, learned will be irrelevant.

2.3. Opinion as to Science or Art

The Expression Science or Art includes all subjects on which a course of special study or experience is necessary for the formation of an opinion. The words science and art are, therefore, to be broadly construed; the term 'science' not being limited to higher sciences and 'art' not being limited to fine arts. To determine whether a particular matter is of a scientific nature or not, the test to be applied is whether the subject matter of inquiry is such that inexperienced persons are unlikely to prove capable of forming a correct judgment without the assistance of experts.

2.4. Medical Experts

The deposition of a medical officer in the court and the reports produced by him are considered as evidence. A mere post-mortem report, however, is no evidence since no facts could be taken from it.

2.5. Value of Medical Evidence:

Expert Evidence should be approached with care and caution. An expert witness, however, impartial is naturally biased in favor of the party who calls him. He is often called by one side simply and solely because it has been ascertained that he holds view favorable to his interest.

Medical evidence isn't direct, and, therefore, the value of such evidence lies only on the extent to which it supports and lends weight to the direct evidence of eye-witnesses or contracts that evidence and removes the possibility that the the injury could take place in the manner alleged by those witnesses. The opinion of a doctor is entitled to great weight but maybe discarded on good grounds.

2.6. The opinion of Handwriting Expert

U/s 45 of the Indian Evidence Act an expert can depose to the identity of handwriting between the questioned document and the document admitted or proved. Disputed handwriting may be proved either by calling an expert (S.45) or by examining a person acquainted with the handwriting of the person by whom the a questioned document is alleged to have been written (S.47) or a comparison of the two u/s 73.

However, the opinion of a handwriting expert is only made admissible; it is not the only Method of proving to handwrite. In *Fakhruddin v. State of M.P.*, the SC suggested three modes of proof of document: firstly, by direct evidence, secondly by expert's evidence and thirdly, by the court coming to a conclusion by comparison.

2.7. Finger-impression

The man's signature is called an unforgettable signature. This head was added to Expert evidence's scope in 1899. The study of

fingerprints are generally Admitted to constitute a science. Its two basic hypotheses are that:

Firstly, fingerprints of a person remain the same from birth to death;

Secondly, there has never yet been found any case where pattern made by one finger exactly resembled the pattern created by any other finger of the same or any other hand.

The opinion of thumb impression expert is entitled to greater weight-age than that of a handwriting expert.

2.8. Firearms Experts

Ballistic Expert Evidence: Ballistics is the science that deals with the motion, behavior, and effects of projectiles, especially bullets, gravity bombs, rockets, or the like; the science or art of designing and hurling projectiles so as to achieve the desired performance. Where the opinion is given by the Expert of Ballistics who, after conducting all the tests, deposes in the Court of law, there is no reason to distrust his opinion. It can be accepted.

That does not mean, in spite of having direct evidence, one should call for the opinion of the expert. In every case where a firearm is alleged to have been used by an accused person, in addition to the direct evidence, the prosecution must lead the evidence of a ballistic expert, however good the direct evidence may and though, on the record, and there may be no reason to doubt the said direct evidence.

Where the ballistic expert has not seen the wound himself but has given his opinion based upon the recordings or photo produced by the doctor who saw or inspected the wound, and no reliance can be placed on such expert opinion. Therefore, the firearms or ballistic expert must have concluded the opinion based on his own findings and personal observation.

2.9. Footprints

Footprint Identification is reliable. Our bare feet contain friction ridge patterns that are unique to each individual. Hence, the fingerprints and footprints found at the scene of offense can be used to help identify the offender. They can be used for identifying the victim as well. The validity of the scientific method used for fingerprinting and the Courts accept footprinting. In *Pritam Singh vs. State of Punjab* [27], disputed footprints in blood near a dead body and going towards the bathroom were compared with those of the accused taken in printer's ink.

The expert gave evidence giving points of nine similarities in respect of the right foot and ten in respect of the left foot: And three dissimilarities only in each case and explained the dissimilarities with reference to the different densities of blood and ink. It was held that the comparison stood the test well, and under the circumstances, these foot impressions in blood near the place of the incident were proved to be those of the accused.

2.10. Deoxyribonucleic Analysis (DNA)

Each A person's genetic makeup contains DNA. This differs from individual to individual. DNA can be obtained through blood, saliva, semen, or hair. This helps in identifying a person. If a drop of blood or a strand of hair is found at a crime scene, it can be compared to a person's known DNA to see if there is a match, thereby linking the person to the crime.

An expert witness can give an opinion about the likelihood that the blood that was found at the crime scene came from the

individual whose sample was compared. The DNA analysis is also used to establish paternity. Experts believe that the ability to link the culprit to the crime scene through his DNA prints is unquestionable as unlike conventional fingerprints that can be surgically altered, DNA is found in every tissue, and no known chemical intervention can change it.

2.11. Lie Detector

Generally, Courts refuse to admit the results of a polygraph test as evidence. The polygraph measures a person's unconscious physiological responses, such as breathing, heart rate, and galvanic skin response while the person is being questioned. The underlying theory is that stress occurs when a person lies and that this stress is measured by changes in the person's physiological responses. There is a concern that an individual can conceal stress when he or she is lying. Polygraph tests are also considered unreliable because it is not possible to tell whether the test itself or causes the stress that is measured during the test by a lie.

3. Forensic Dimensions of Existing Laws in India

3.1. Constitutional Validity of Forensic Evidence and Human Rights Aspects

The dimension of forensic science starts from Indian Constitution and admissibility of forensic evidence under Article 20, 21 and 22 and Lie detector, Narco-analysis, DNA test etc. Several arguments on this point that lie detector test is anti-constitutional or not. In article 20(3) There is bar for self-incriminatory statement and it says that the accused of any offence cannot be compelled to be witness against himself. Supreme Court in one case says taking specimen fingerprints and handwriting from accused is not hit by article 20(3) as being 'witness against himself'. On other side in another case, it says test result of polygraph and brain fingerprinting test are testimonial compulsions and the bar of article 20(3) applies. At the same time, it says the protection against compulsion to be a witness is confined to persons accused of an offence. There is no constitutional protection to witnesses (i.e. persons other than the accused).

In *Dharma vs. Nirmal Singh and other* (AIR 1996 SC 1136), the Supreme Court held that an autopsy surgeon deposes in the Court is his finding relating to the nature of injuries and not as to how those injuries were caused. In *Smt. Maya Gohiya vs. Prem Lal* (1990 MPLJ 362) case, the wife filed divorce petition on the ground of impotency, but the husband denied the averments leveled against him and submitted that he was fully capable of performing sexual act with his wife. The wife filed an interlocutory application seeking medical examination of her husband about his potency. The Madhya Pradesh High Court held that the impotency is the part of cruelty. In *Nagindra Bala Mitra vs. Sunil Chandra Roy* (1960 Cr.LJ 1020) case, S.K.Das and Sarkar, the justices of the Supreme Court held that, the medical witness is witness of fact, and his evidence is not direct evidence. The medical evidence cannot itself prove the prosecution case. Its value is only corroborative.

In *Basudeo Mahto vs. State* (1970 Pat LJR 376) case, the Patna High Court held that the medical certificates or reports are inadmissible being the worst form of hearsay evidence. In such an occasion, the writer or the person, who wrote or issued it, shall be called to prove its contents. Else there is plenty of chances to create false and concocted certificates and reports.

3.2. The Indian Evidence Act, 1872

In regular civil and criminal laws in India, forensic aspect of are not much discussed or no provision as such which can specify the exact forensic aspect of the provisions. One has to predict it on the basis of its connection medical aspect of civil or criminal laws. Some of the provisions are given in Indian Evidence Act in the form of Expert Opinion from Sections 45 to 51. Out of this section 45 talks about Expert Testimony and opinion when relevant.

In India, law regarding evidence is uniform in both Civil and criminal cases, the degree of proof required may be somewhat different in civil and criminal cases but mode of giving evidence is governed by same legislation. In India, we have adversarial system of justice administration and ordinarily medical evidence is admitted only when the expert gives oral evidence under oath in the courts of law.

The law of evidence allows an opinion of any person other than the judge as to the existence of the facts in issue or facts that are relevant to a matter. The judge is not expected to be an expert in all fields especially where the subject matters involve technical or specialized knowledge. In these circumstances he needs the help of an expert- who has superior knowledge or experience in relation to the subject matter.

Sec. 45 to Sec.51 under Chapter two of the Indian Evidence Act provide relevancy of opinion of third persons, which is commonly called in our day to day practice as expert's opinion. These provisions are exceptional in nature to the general rule that evidence is to be given of the facts only which are within the knowledge of a witness. The exception is based on the principle that the court can't form opinion on the matters, which are technically complicated and professionally sophisticated, without assistance of the persons who have acquired special knowledge and skill on those matters. It is chiefly with respect to questions of science and trade, where often it is difficult to obtain direct and positive evidence, that persons of specialized skills or knowledge are allowed to give their opinions as evidence and are also allowed to testify to the facts.

Under Section 45, opinions of experts are relevant to questions of foreign law, science, art, identity, handwriting, or finger impressions. Expert testimony is admissible on the principle of necessity. The help of experts is necessary when the question involved is beyond the range of common experience or common knowledge or where the special study of a subject or special training or skill or special experience is called for. No man is omniscient; in fact, perfection is an attribute of divinity only.

As a general rule, the opinion of a judge, only plays a part and is thus relevant in the decision of a case, and therefore, the opinion of any person other than the judge about any issue or relevant fact is irrelevant in deciding the case. The reason behind such a rule is that if such opinion is made relevant, then that person would be invested with the character of a judge. Thus, Section 45 is, therefore, an exception to this general rule, as it permits the experts' opinion to be relevant in deciding the case.

The reason behind this is that the judge cannot be expected to be an expert in all the fields- especially where the subject matters involve technical knowledge as he is not capable of drawing an inference from the facts which are highly technical. In these circumstances, he needs the help of an expert- who is supposed to have superior knowledge or experience in relation to the subject matter.

“When the Court has to form an opinion upon a point of foreign law, or of science, or art, or as to identify handwriting or finger impressions, the opinions upon these points of persons specially skilled in such foreign law, science or art or in questions as to the identity of handwriting or finger impressions, are relevant Facts. Such persons are called experts.”

A Fact is something cognizable by the senses such as sight or hearing, whereas opinion involves a mental operation. Under Section 3, the opinion of a person will be a fact too. U/s 60 oral evidence in all cases must be direct if inter alia it refers to an opinion or to grounds on which that opinion is held. It must be the evidence of the persons who hold the opinion on those grounds.

A distinction must be drawn, however, between the cases where an opinion may be admissible u/s 6 to 11 as forming a link in the chain of relevant facts to be proved and between cases where opinions are admissible under sections 45-51. The former evidence is given by the non-expert or the unskilled witness while the latter is given by the expert witness. Thus, in matters of calling for special knowledge or experience or skill, opinions of expert witnesses are relevant u/s 45-51.

So far as criminal jurisprudence in India is concerned doctrine of *onus probandi* is in the field and therefore one shall be presume innocent till his crime is proved not only proved but proved beyond reasonable doubt, this principle of *onus probandi* recognized under chapter of the Evidence Act which has restricted use of forensic science in criminal trials in India. It is very difficult to say anything beyond reasonable doubt so far as techniques of ascertaining fact with the help of forensic science is concerned. But with the passes of time modern techniques developed in the field of Forensic science are capable of ascertaining facts somewhat beyond reasonable doubt. In this background it is more appropriate to conduct a study in the recent Judgments of Supreme Court of India to see the change in the approach and attitude of Judiciary in appreciating forensic evidences in Criminal cases.

3.3. Code of Criminal Procedure, 1973

Under Section 291 of Code of Criminal Procedure the deposition of medical witness of civil surgeon or other medical witness, taken and attested by a Magistrate in the presence of the accused, or taken on commission under this Chapter, may be given in evidence in any inquiry, trial or other proceeding under this Code, although the deponent is not called as a witness. Also the Court may, if it thinks fit, and shall, on the application of the prosecution or the accused, summon and examine any such deponent as to the subject-matter of his deposition.

Under 292 the Evidence of officers of the Mint in any document purporting to be a report under the hand of any such officer of any Mint or of any Note Printing Press or of any Security Printing Press (including the officer of the Controller of Stamps and Stationery) or of any Forensic Department or Division of Forensic Science Laboratory or any Government Examiner of Questioned Documents or any State Examiner of Questioned Documents, as the case may be, as the Central Government may, by notification, specify in this behalf, upon any matter or thing duly submitted to him for examination and report in the course of any proceeding under this Code, may be used as evidence in any inquiry, trial or other proceeding under this Code, although such officer is not called as a witness. The Court may, if it thinks fit,

summon and examine any such officer as to the subject-matter of his report: Provided that no such officer shall be summoned to produce any records on which the report is based.

Without prejudice to the provisions of sections 123 and 124 of the Indian Evidence Act, 1872 no such officer shall, except with the permission of the General Manager or any officer in charge of any Mint or of any Note Printing Press or of any Security Printing Press or of any Forensic Department or any officer in charge of the Forensic Science Laboratory or of the Government Examiner of Questioned Documents Organisation or of the State Examiner of Questioned Documents Organisation, as the case may be,] be permitted to give any evidence derived from any unpublished official records on which the report is based; or to disclose the nature or particulars of any test applied by him in the course of the examination of the matter or thing.

Also high importance has been given to reports of certain Government scientific experts under Section 293 of Cr.P.C. If any document purporting to be a report under the hand of a Government scientific expert to whom this section applies, upon any matter or thing duly submitted to him for examination or analysis and report in the course of any proceeding under this Code, may be used as evidence in any inquiry, trial or other proceeding under this Code. The Court may, if it thinks fit, summon and examine any such expert as to the subject-matter of his report. Where any such expert is summoned by a Court, and he is unable to attend personally, he may, unless the Court has expressly directed him to appear personally, depute any responsible officer working with him to attend the Court, if such officer is conversant with the facts of the case and can satisfactorily depose in Court on his behalf.

This importance has been given to reports of the following Government scientific experts, namely:

- any Chemical Examiner or Assistant Chemical Examiner to Government;
- the Chief Controller of Explosives;]
- the Director of the Finger Print Bureau;
- the Director, Haffkeine Institute, Bombay;
- the Director, Deputy Director or Assistant Director of a Central Forensic Science Laboratory or a State Forensic Science Laboratory;
- the Serologist to the Government;
- Any other Government scientific expert specified, by notification, by the Central Government for this purpose.

Section 53A provides for the detail examination of person accused of rape by medical practitioner of a person accused of an offence of rape or an attempt to commit rape by the registered medical practitioner employed in a hospital run by the Government or local authority and in absence of such practitioner by any other registered medical practitioner. Also Section 54 state that when any person is arrested, he shall be examined by a medical officer and where the arrested person is a female, the examination of the body shall be made only by or under the supervision of a female medical officer. The medical officer or a registered medical practitioner so examining the arrested person shall prepare the record of such examination, mentioning therein any injuries or marks of violence upon the person arrested, and the approximate time when such injuries or marks may have been inflicted and copy of the report of such examination shall be furnished by the medical officer or registered medical

practitioner, as the case may be, to the arrested person or the person nominated by such arrested person.

At the same time Section 164A also provides for the detail examination of victim of rape by the registered medical practitioner. According to this, where, during the stage when an offence of committing rape or attempt to commit rape is under investigation, it is proposed to get the person of the woman with whom rape is alleged or attempted to have been committed or attempted, examined by a medical expert, such examination shall be conducted by a registered medical practitioner employed in a hospital run by the Government or a local authority and in the absence of such a practitioner, by any other registered medical practitioner, with the consent of such woman or of a person competent to give such consent on her behalf and such woman shall be sent to such registered medical practitioner within twenty-four hours from the time of receiving the information relating to the commission of such offence. The registered medical practitioner, to whom such woman is sent, shall, without delay, examine her person and prepare a report of his examination giving the name and address of the woman and of the person by whom she was brought; the age of the woman; the description of material taken from the person of the woman for DNA profiling; marks of injury, if any, on the person of the woman; general mental condition of the woman; and other material particulars in reasonable detail.

The report shall state precisely the reasons for each conclusion arrived at. The report shall specifically record that the consent of the woman or of the person competent to give such consent on her behalf to such examination had been obtained. The exact time of commencement and completion of the examination shall also be noted in the report. The registered medical practitioner shall, without delay forward the report to the investigating officer who shall forward it to the Magistrate referred to in section.

3.4. Laws Related to Forensic Science in India

Apart from the legal provisions under the Indian Evidence Act and Code of Criminal Procedure, there are some provisions relating to the offence in general in Indian Penal Code and in specific under several special Acts some of them are as follows:

- Arms Act, 1959
- Explosives Act 1984
- Explosive Substance Act 1908
- Medical Termination of Pregnancy Act 1971
- Mental Health Act, 1987
- Motor Vehicle Act, 1988
- Narcotic Drugs and Psychotropic Substances (NDPS) Act 1985
- Petroleum Act 1934
- Prenatal Diagnostic Technique Act 1994
- Prevention of Food Adulteration Act 1954
- Prevention of Damage to Public Property Act 1984
- Small Coins (Offence) Act 1971
- Standards of Weight and Measures Act 1976
- The Poisons Act, 1919,
- The Drugs and Cosmetics Act 1940
- The Bureau of Indian Standards Act, 1986

4. Need of Specific Laws in India

The ultimate objective of the law and criminal justice delivery system, which enforces and administers law, is prevention of

crime. When an offence is committed, the law must provide for its investigation, for establishing the guilt of the offender and for his punishment and correction in such a manner that not only the offender is retrieved from criminality but others too are deterred from doing so. India's criminal justice delivery system is based on Anglo-Saxon accusatorial system under which the emphasis of the judiciary is not all truth but on evidence. The Indian Judiciary is not interested in finding out whether the criminal has committed an offence, whether the prosecution has presented clinching evidences against him. Even if the court is convinced that the accused has committed the offence, is inclined to give him the benefit of doubt if the evidence is not enough or convincing. Thus, the accusatorial system does not place any responsibility on judiciary in the control of crime or in ensuring that the offender is penalized. In comparison, most of the countries in Europe inquisitorial system, under which the judiciary is charged with the responsibility of finding out the truth and making it accountable for control of crime. Under the system, the judge functions as an activities, searching for facts and evidence, questioning the witness and the accused and delivering judgment on the basis of his personal findings.

As world rapidly develops in its use of technology and innovation, fields such as forensic science have been able to expand in terms of its tools and techniques. Previous concepts that revolutionized forensics, such as DNA analysis, have been developed further in order to increase the richness of the information being found; such as DNA phenotyping. Also, there is a dearth of specific regulations and legislations all over the world related to tools and techniques aiding in investigation.

Although the growth has enabled new discoveries to be made in both past and on-going crime investigations, these developments are still not accepted and practiced in India. This, it seems, can be due to a number of reasons including a need to update regulations and legislatures to withstand the fact that some techniques maybe potentially open to manipulation by the criminal fraternity. Therefore, the tools and techniques developed must be established to be full proof with proper enactment of related legislatures.

Throughout history, evidence has been used to convict criminals of the crimes that they have committed. Today's society has improved upon the methods of the past to bring about more precise and accurate techniques. These techniques are more commonly known as the field of forensic science.

The aim of science, traditionally put, is to search out the ways in which truth may become known. Law aims at the just resolution of human conflict. Truth and justice, we might venture to say, having different aims, use different methods to achieve them. Unfortunately, this convenient account of law and science is itself neither true nor just. For law must know what the truth is within the context of the legal situation: and science finds itself ever engaged in resolving the conflicting claims of theorists putting forward their own competing brands of truth. It means the law needs to find the truth to resolve "human conflict" and one method of doing so is to use the field of science. The only problem with this method is that science is struggling to find the legal validity and its unconditional acceptance in given case as legal proof of existing fact. In India, still the forensic method of evidence collection is not used in all criminal cases, it's been used in some rare cases which ultimately leading the cases in acquittal in large proportion at one side. On the other hand wherever it's

been applied, the constitutional validity and legality of scientific proof is always questioned.

India's accusatorial system places the entire burden of proof on the investigating agencies, almost coercing it to patch and plant evidence, or resort to all kinds of illegalities to build a full proof case by hook or crook. This pressure also compels the investigators to resort to third degree methods in order to gather evidence. Our social setup is heterogeneous and majority of the population is illiterate, poor and caste ridden. Genuine witness, generally, are reluctant to tender evidence and even if they do, their evidence is diluted the intense battle of search, cross examination and re-emanation. Prolonged judicial trials, majority of them ending in acquittals have very demoralizing effect on society. The rate of acquittals, particularly in heinous offences, is quite disturbing. Eighty percent criminals, who commit heinous offence, get away for want of evidence of crime that can stand the scrutiny of the court.

The legal system in this country was largely modeled on the pattern of British laws, which were conspicuous, by the absence of provisions for application of scientific knowledge to the administration of justice. We are living in 21st Century and our criminal justice system continues relentlessly to be governed by the same old laws. The India criminal justice system has not shown resilience, the adaptability and required changes to cope with the increased responsibilities, heightened societal expectations and greater emphasis on human dignity. The British enacted The Police Act in 1861, a good 159 years ago and it's still continues on the statute books. The Indian Penal Code was enacted in 1860 and continues to command criminal punishment till today except some minor amendments. The Indian Evidence Act of 1872 did not have this kind of luck. It continues in its original form. The British enacted the code of criminal procedure in 1898. It is the only Act to have been updated, but only marginally in 1974, and continues to be still the quite ancient. Therefore there is need for change of all Indian criminal laws to accommodate the forensic science & scientific evidence as important evidence as for proof of the existing facts to increase the conviction rate and decrease the crime rate.

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