CHAPTER V

CRIMINALISTICS AND SCOPE OF STUDY INVOLVING MAJOR CRIMINAL LAWS

The examination of firearms evidence deserves a unique place in the Police Laboratory Work-sequence. The frequency with which firearms are used in criminal assaults, has resulted in the development of a highly sophisticated and specialized aspect of criminalistics known as "firearms identification" also referred to as "forensic ballistics". The term "forensic science" is sometimes used as a synonym for criminalistics. Criminalistics is concerned with the recognition, identification, individualization, and evaluation of physical evidence using the methods of the natural sciences in matters of legal significance. People who are engaged in criminalistics as a profession are called criminalists. In fact, criminalistics is the use of scientific methods of observation and analysis to detect and interpret physical evidence. Almost any object, substance, trace or impression could constitute physical evidence. It is a matter of concerning a thing rather than people or words. Anything that proves that a crime has taken place or that serves to identify criminals, trace them, or associate them with their crimes is a form of physical evidence. However, in broad terms, it embraces any and all objects whether animate or inanimate, solids liquids or gases, that have a bearing on the unravelling of a crime. As such, any material that tends to establish the corpus delicti of a crime (Proof that a crime has in fact occurred);
or the identity and/or location of the victim, suspect, or witnesses or evidences; or that indicates the circumstances concerning the perpetration of the crime, the precise means, methods or instruments of committing the crimes or the motive for the crime may form a physical evidence. This summing up of the men, means and motives by George B. Mettler in his classic exposition of the subject of criminal investigation in 1977 has been considered as the primary axiom of investigation in the forensic field and widely acclaimed across the continents. Commonly used weapons like firearms, knives and bludgeons; ammunitions like bullets, shells, gunpowder; drugs and poisons, imprints and impressions, toolmarks, blood, hairs and fibres, dust, dirt and debris, fire and explosive residue, glass, paints, semen stains, wood, suspected poisoned food, documents, vomit, urinemay be cited as examples of physical evidence to be associated with criminals committing different types of crimes. All or any of these evidentiary materials may lead to very important clues in specific cases.

The "firearms identification expert" is one who had qualified himself in the specialty of firearm identification or in some significant aspect of it and the specialist is known as a "ballistics expert". The content and connotation of the word "ballistics", as used in common parlance, is the science of projectiles. The qualifying word "forensic", according to standard lexicons means and includes something belonging to courts of law. In legal phraseology, therefore, forensic ballistics
would connote a branch of science specially covering the technical aspects involved in an expert examination of a firearm or a weapon falling into that category. Thus, forensic ballistics is concerned with the investigation of firearms and ammunition and with problems arising from their use for purposes of legal evidence. Forensic ballistics is divided into interior ballistics, exterior ballistics, and terminal ballistics. Interior ballistics in the study of the projectile in the gun; exterior ballistics, the study of the projectile through air; and terminal ballistics, the study of penetration of solids by the missile. Wound ballistics can be considered a subdivision of terminal ballistics concerned with the motions and effects of the projectiles in tissue.

The types of firearms most frequently used in our country are pistols, revolvers, shotguns—both muzzleloaders and breech-loaders, sawn off shotguns, rifles, stenguns and varieties of home-made guns including handguns and shoulderguns. Generally, the following information may be obtained from laboratory examination of the types of firearms evidence.

I. Bullet recovered from the scene or victim
(a) List or name of possible manufacturers, caliber, type and make of weapon from which fired
(b) Whether sufficient markings are present for individualization
(c) Whether fired from a particular weapon, assuming sufficient markings present and depending or whether the weapon is available for test firing

(d) Shot pellet size or slug load gauge for shotgun projectiles

II. Fired cartridge case or shotshell casing from the scene

(a) Specific caliber or type of a particular model

(b) Possible make of the weapon from which fired

(c) Gauge of shotgun in the case of a shotshell casing and whether it was an original factory load or a hand load

(d) Whether a cartridge case or a shotshell was fired by a particular weapon, assuming the weapon is available for test firing

(e) Manufacturer in cases of a factory load

III. Weapon

(a) Manufacturer, specific caliber (or gauge) and type

(b) Operating condition of firearm, functioning of safety and trigger pull

(c) Whether the weapon is capable of being fired accidentally
(d) Identification of gun parts as to the type of weapon from which they originated
(e) Distance at which the gun was fired
(f) Position of the shooter at time of firing
(g) Obliterated serial member restored
(h) Ownership traced
(i) Whether it was used to fire a particular bullet or cartridge case or shotshell casing

(j) Imprints or impressions or transfer evidence developed
(k) Used in other crimes

IV. **The relevant clothing**

To determine whether a hole aperture on a fabric is due to gunshot or any other weapon

V. **Cases involving countrymade (homemade) firearms**, besides the above queries, to determine

(a) Whether it is a firearm as defined in the Arms Act, 1959
(b) The type of ammunition for which it is chambered
(c) Whether it can safely fire that ammunition
(d) Its effective range
VI. Cases involving shooting through glass, to determine

(a) The point of impact
(b) The direction and angle of fire
(c) Sequence of shots if more than one shot has been fired
(d) Identification of the shooter

VII. Reconstruction in shooting cases

(a) Muzzle to target distance
(b) Trajectory of the fired bullet (bullets)
(c) Striking velocity and energy of the projectiles

Following are some of the medico-legal questions which arise in a case of firearm injury:

(1) Is the injury the result of discharge of a firearm?
(2) What kind of weapon fired the fatal shot? Gunshot wounds—shotgun; "rat-hole" to dispersion; rifles and pistols; contact, entrance, exit.
(3) From what distance and direction was the fatal shot (or shots) fired?
(4) If multiple wounds of entrance and exit are present, could they have been produced from the same or different weapons?
(5) How long did the victim survive?

(6) What is the age of the wound?

(7) How much activity, purposeful or otherwise, could the victim perform following the shooting?

(8) Whether the wound is accidental, suicidal, or homicidal; "hesitation" wounds in suicides and "defence" wound in homicide?

The possibility of identifying a hole as caused by a bullet on the basis of the residues has been fairly well established due to the modern sophisticated technique of Neutron Activation Analysis (NAA). The activation analysis unit of the Central Forensic Science Laboratory, Calcutta started work at Bhabha Atomic Research Centre (BARC), Trombay, Bombay, from 1971.

From the foregoing analysis and discussion it is seen that even when the investigation has to proceed on the basis of circumstances appearing from a dead body, medical Science and an expertise of the intricacies of a firearms weapon can afford very useful information to connect a crime with a suspect. At the judicial stage, it is the worth of the legal evidence that will count. "The legal profession must not, by restrictive procedure, deprive itself of the vast and ever expanding body of expert evidence, scientific and otherwise."
When the evidence of the identity of some particular arm can be established both by the evidence of a fired bullet and that of a fired cartridge case, after careful experimentation and comparison of these respectively with the test fired bullets and cartridge cases under the comparison Microscope, the question may arise as to which is more reliable. There can be only one answer: both are equally reliable provided both can be put forward in a manner which can be appreciated and understood by a non-technical jury. In a Lahore case the expert testimony on range estimation was heavily relied on by the court and accordingly it was held that in firing his gun so as to cause fatal injuries to the deceased the accused did not exceed the right of the defence of the body which he enjoyed according to law and therefore he was acquitted.

The reconstruction of the sequence of events in shooting cases is becoming increasingly important. The defence often attempts to discredit the prosecution version and vice versa. Reconstruction of a shooting case is done to understand the sequence of events, to verify the different versions and theories about the occurrence and to decide whether it is a suicide, accident or a murder. In a case the reconstruction of the incident was done that the various findings of bullet marks on the wall, on the calendar, the door pane in the light of the evidence of the ballistics expert did not leave any scope for even a shadow of doubt that the victim (doctor) was hit by a gun fired from inside the drawing room.
Some of the selected areas of Forensic Ballistics under criminalistics are described above. It has not been possible to cover all the aspects and areas under the subject due to limited space. Thus, the discussion is a partial and open introduction to the subject of criminalistics in general and forensic ballistics in particular only and is not an exhaustive one. The lack of understanding and critical appraisal of specialists in general, by non-specialists, is all-pervasive. The field of Forensic Science is no exception. Neither the police, nor the lawyer, nor even the judge appreciates fully the advances or the extensive potentialities of the science. However for success, besides strenuous laboratory work, it is necessary that the police correctly collects the correct clues, the counsel links the clues with the accused and the judge utilizes the expertise. If they fail to do so, the whole edifice built on science crumbles down. And it does happen in the courts frequently.

The Indian Penal Code, 1860 provides among others, offences and penal provisions involving firearms as well. These include "Of offences against the State" under Chapter VI such as waging or attempting to wage war or instigating waging of war, against the Government of India\(^4\), conspiracy to commit offences punishable under Section 121\(^5\), collecting arms etc., with intention of waging war against the Government of India,\(^6\) concealing with intent to facilitate design to wage war,\(^7\), waging war against any Asiatic Power in alliance with the
Government of India,18 and committing depredation on territories of Power at peace with the Government of India19; "Of Offences relating to the Army, Navy and Air Force" under Chapter VII such as shooting mutiny, attempting to seduce a soldier, sailor or airman from his duty,20 and attempt of mutiny, if mutiny is committed in consequence thereof21; "Of Offences against the public tranquillity" under chapter VIII such as joining unlawful assembly, armed with deadly weapon,22 rioting, armed with deadly weapon,23 and being hired to take part in an unlawful assembly or riot; or to go armed24; "Of offences affecting the human body" under chapter XVI such as — Of offences Affecting life— culpable homicide25, Murder— when culpable homicide is not murder26, culpable homicide by causing death of person other than person whose death was intended27, attempt to murder— attempt by life convicts28, attempt to commit culpable homicide29, attempt to commit suicide30;— Of Hurt— voluntarily causing hurt by dangerous weapons or means, and voluntarily causing grievous hurt by dangerous weapons or means;32 "Of Offences against Property" under chapter XVII such as— Of Robbery and Dacoity— robbery— when theft is robbery and when extortion is robbery,33 dacoity34, voluntarily causing hurt in committing robbery35, dacoity with murder36, robbery, or dacoity, with attempt to cause death or grievous hurt37, attempt to commit robbery or dacoity when armed with deadly weapon38, making preparation to commit dacoity39, assembling for purpose of committing dacoity40; — Of Criminal Trespass— grievous hurt caused
whilst committing lurking house trespass or house-breaking\(^4\),
and 11 persons jointly concerned in lurking house trespass or
house breaking by night punishable where death or grievous hurt
caused by one of them\(^4\).  

Crimes under chapter VI and chapter VII under the IPC,
1860 have already been treated elaborately\(^4\) while discussing
political crimes under treason, sedition, espionage, and mutiny all
of which may be termed as purely political crimes.

Through the possession and use of weapons in the commission
of a crime is itself a separate offence, there are situations
where it has been considered as an aggravating circumstance.
Generally speaking the use of a weapon indicates a disregard for
the safety of the public which should be reflected in a harsher
sentence upon the ground that the public needs more protection from
such an offender, and must repudiate such conduct\(^4\). It has been
amply reflected in the IPC as it is seen that more scope for
punishment is provided when the commission of a crime is associated
with dangerous weapons such as voluntarily causing hurt by danger­
rous weapons or means\(^4\) \((i)mprisonment upto 3 years, or with fine
or with both) in contrast with voluntarily causing hurt\(^4\)
\((i)mprisonment upto 1 year, or fine upto Rs. 1000/- or with both)  
or that voluntarily causing grievous hurt by dangerous weapons or
means\(^4\) \((i)mprisonment for life, or up to 10 years and fine) in
contrast with voluntarily causing grievous hurt\(^4\) \((i)mprisonment upto
7 years and fine). Also, presence of deadly weapon in committing
or attempting to commit dacoity or robbery make these two crimes at the same level relating to sentencing. This is found to be justified in the sense that armed robbery is far more likely to result in death than is an unarmed robbery. Hence, the seriousness of a robbery is associated with weapon type regardless of the outcome. Thus, a distinction between gun robberies and other armed robberies in terms of sentencing appears justified by wide variations in the fatality rate amongst different weapon categories.

Examples discussed in this paragraph under different sections of the IPC are illustrative and not exhaustive. In all these cases "dangerous weapons" and "deadly weapon" also include "firearms". Canadian law also distinguishes gun robberies and other armed robberies in terms of sentencing.

From the penal provisions so far discussed in this chapter it has been found that both definite and indefinite types of sentences have been provided. Indefinite sentence is found to be a common phenomenon in sentencing pattern. Punishment for murder and punishment for murder by life convict are associated with definite sentence. However, Section 303 of the IPC has been held to be ultra-vires and goes against Articles 14 and 21 of the constitution of India. Furthermore, there has also been found to be a provision for mandatory minimum sentences. In both these types of offences, namely, robbery, or dacoity, with attempt to cause death or grievous hurt and attempt to commit robbery or
dacoity when armed with deadly weapon, the mandatory minimum punishment is seven years imprisonment. A mandatory minimum sentence is a legislative requirement that certain convicted offenders must be sent to prison and must spend a specified period of time there before even being considered for release. Even in the case of an attempted robbery or dacoity, the mere carrying of deadly weapon by an offender would entail the consequence, that in case of a conviction, he would receive a minimum sentence of seven years' rigorous imprisonment. The word "uses" occurring in Section 397 IPC should be construed broadly, as including the case of carrying a deadly weapon during the dacoity or robbery.

The Attorney General's Task Force on violent crime in the USA on Federal Firearms Policy has attracted high legislative attention, however, calls on the Attorney General to support or propose legislation requiring a mandatory sentence for the use of firearm in the commission of a federal felony. Arguments for and against mandatory minima address a wide variety of issues some related and some categorically distinct. Arguments for minimum mandatory sentences are based on (i) community protection, (ii) deterrence, (iii) reflection of local sentiment, (iv) shared sentencing responsibility, (v) support of correctional programming (vi) reduction of disparity, (vii) expression of public sentiment. Arguments against mandatory minimum sentences are based on (i) negation of individualization of justice, (ii) illusory community protection, (iii) effect of the heat of passion,
(iv) usurpation of the parole authority, (v) regressiveness.

However, Milton EEAwm ann et al.\textsuperscript{58} shows that alternative policies, more systematic in addressing the question of violent firearm offences, and affording an opportunity for the structured exercise of discretion by prosecutors and judges, strike them as more promising avenues for policy consideration. This same note of caution may equally be applicable to our country too.

Legality of joint trial under Section 399 IPC and Section 18(f) Arms Act\textsuperscript{59} is found to be proper as both the offences would form part of the same transaction\textsuperscript{60} but it is not lawful where offences under Section 302 IPC and Section 25 of Arms Act\textsuperscript{61} do not form part of the same transaction and in that circumstance case under Section 25 should also be committed to the court of sessions in order to avoid inconsistent findings although the offence under Section 25\textsuperscript{62} is not exclusively triable by the court of sessions\textsuperscript{63}. So also committal to sessions a case after framing charges under Section 302 IPC and Section 19(f) of the Indian Arms Act, 1878 has been found to be in order.\textsuperscript{64} A conviction under Section 27 of the Arms Act, 1959 is not maintainable after acquittal of an offence under Section 148, IPC\textsuperscript{65}. Similarly, where the charge under Sections 395/457 IPC failed, conviction under Section 25 of the Arms Act, 1959 would not be proper and separate trials under Section 25 of the Arms Act and Section 411 IPC may result in two convictions which are competent.\textsuperscript{66}
Although the Criminal Procedure Code, 1973 does not provide any particular and specific provision in terms of procedure relating to crimes involving firearms, the general procedural provisions are applicable to these types of cases concerning cognizable offences as the offences under the Arms Act, 1959 are all cognizable offences. Furthermore, most of the higher order offences under the Indian Penal Code, 1860 involving firearms are triable by the courts of sessions and so sessions procedure as well as committal proceedings are of utmost importance. Some other relevant sections under the code which may be remotely connected with the issue may include "Arrest of Persons" under chapter V such as when police may arrest without warrant and power to seize offensive weapons; "Security for keeping the peace and for good behaviour" under chapter VIII such as security for keeping the peace or conviction, security for keeping the peace in other cases, security for good behaviour from suspected persons and security for good behaviour from habitual offenders;

"Maintenance of public order and tranquillity" under chapter X - A - unlawful assemblies - such as dispersal of assembly by civil force, use of armed forces to disperse assembly; B - power of certain armed force officers to disperse assembly; C - urgent cases of nuisance or apprehended danger - such as power to issue order in urgent cases of nuisance or apprehended danger; D - Disputes as to immovable property - such as procedure where dispute concerning land or water is likely to cause breach of peace, power to attach
subject of dispute and to appoint receiver and dispute concerning right of use of land or water; "Preventive action of the police" under chapter XI such as police to prevent cognizable offences, information of design to commit cognizable offences and arrest to prevent the commission of cognizable offences; "Condition requisite for initiation of proceedings" under chapter XIV such as prosecution for offences against the state and for criminal conspiracy to commit such offence; "The charge" under chapter XVII of B-Joinder of charges; "Evidence in enquiries and trials" under chapter XXIII B-commissions for the examination of witnesses such as reports of certain Government scientific experts; and "General provisions as to inquiries and trials" under chapter XXIV such as compounding of offences.

Since the evidence part has got a direct link with the pivotal procedural provision under section 293 of the Criminal Procedure Code, 1973, the discussion correlates the two aspects after screening out the important relevant provisions under the Indian Evidence Act, 1872.

The important and relevant items under the Indian Evidence Act, 1872 are under part I "Opinions of third persons when relevant" under chapter II such as opinions of expert; and facts bearing upon opinions of exterts; "Facts which need not be proved" under part II chapter III such as facts judicially noticeable need not be proved, and facts of which court must take
judicial notice; and "of the burden of proof" under part III chapter VII such as burden of proof; on whom burden of proof lies, burden of proving that case of accused comes within exceptions, and court may presume existence of certain facts.

Section 45 of the Indian Evidence Act, 1872 states—

45, Opinions of experts—when the court has to form an opinion upon a point of foreign law, or of science or art, or as to identity of handwriting or finger impressions, the opinions upon that point of persons specially skilled in such foreign law, science or art, or in question as to identity of handwriting or finger impressions are relevant facts.

Such persons are called experts. Evidence signifies that which demonstrates, makes clear or ascertains the truth of the very fact or point at issue, either on the one side or the other. Evidence is either direct or circumstantial (indirect). Direct evidence is that evidence which proves a fact in issue directly without any reasoning or inferences being drawn on the part of the fact finder. Circumstantial evidence is that evidence which indirectly proves a fact in issue. "Circumstantial evidence" has been defined as evidence attesting to the existence or non-existence of a fact which is not itself material to the issue of guilt or innocence of the accused but from which, either alone or in connection with other facts, a court may, according to the common experience of mankind, reasonably infer the existence or
non-existence of another fact which is material to the issue of
guilt or innocence of the accused.

In criminalistics, circumstantial evidence is associated
with physical evidences. Circumstantial evidence can establish
guilt beyond a reasonable doubt as effectively as the testimony
of eyewitnesses, and no higher standard of proof is required in
a circumstantial evidence case than in a case proved by testimony
of eyewitnesses. Circumstantial evidence is very often the
best. It is evidence of surrounding circumstances, which, by
undesigned coincidence, is capable of proving a proposition with
the accuracy of mathematics. It is no derogation of evidence to
say that it is circumstantial. However, where circumstantial
evidence alone is relied on to prove any one or more of the essential elements of the crime the evidence must be entirely consistent
with any rational hypothesis of defendant's innocence and so
convincing as to exclude a reasonable doubt that defendant was
innocent of the offence charged. Corroborative evidence is
evidence which strengthens, adds weight or credibility. In many
instances, corroborative evidence is the evidence which is most important in carrying the burden of persuasion in the minds of
the fact finder. The machinery of modern science is increasingly
operated in the investigation of crime with startlingly convincing
results and thereby strengthening the edifice of the aspect of
circumstantial evidence.
Physical evidence (or real evidence, as it is sometimes called) is different than some of the other types of evidence in that physical evidence often speaks for itself. While the testimony of a witness may be inaccurate, exaggerated, or biased, it has been stated by writers that physical evidence cannot lie. Nor may physical evidence be impeached as the testimony of a witness may be impeached. As a general rule, juries and judges like physical evidence because they can usually visually see what has been stated in oral testimony. For these reasons, criminal courts tend to give greater weight to scientific tests and physical evidence which speaks for itself.

The greatest body of scientific evidence is obtained from physical evidence by means of scientific equipment, methods or procedures. Like all physical evidence, the primary source of scientific evidence is: (a) the crime scene and its immediate vicinity, (b) the person and clothing of the suspect, and (c) the person and clothing of the victim of the crime. As a rule of evidence it has been stated that it is unsafe to base a conviction solely on expert opinion without substantive corroboration.

Relating to English law on expert opinion evidence: (1) The opinion of expert is admissible upon all subjects for which special study or experience is necessary to the formation of an opinion, e.g. matters of science, art, medicine or foreign law. Whether the witness is competent to give expert evidence is for the judge to
In matters with respect to which a witness cannot give positive testimony, he may speak as to his opinion or belief e.g. for the identification of persons, things, or handwritings, or in questions of physical or mental conditions. The American law of Restatement states that an expert witness is one who is skilled in some art, trade, profession or science or one who has knowledge and experience in relation to matters which are not generally within the knowledge of men of common education and experience, and the opinion of such a witness on a state of facts which is within his specialty and which is relevant to an issue properly before the court is ordinarily admissible.

In India, "Expert evidence" and an "expert" on firearms cases are directly and particularly linked with section 45 of the Evidence Act, 1872 and Section 293 of the Criminal Procedure Code, 1973. The "expert" really means a person who by reason of his training or experience is qualified to express an opinion, whereas an ordinary witness is not competent to do so. Such a person can give evidence wherever the subject is one upon which competency to form an opinion can only be acquired by special experience, e.g. science, art, finger print, calligraphy or foreign law. It is the duty of the trial court to come to a conclusion, on a question of fact, on a consideration of the entire evidence including that of the expert. A forensic ballistic expert or a firearm identification expert is also an expert under this meaning.
as he is associated with a subject of science requiring special skill, knowledge and experience to proffer a considered informed opinion.

Although the Section 45 of the Evidence Act does not speak of "trade", "handicraft", or "profession", there is absolutely no reason to suppose that the Indian legislature intended to make a departure from the English law on the subject, by confining expert testimony to pure science or art. Thus, liberally construed, like English and American (U.S.A.) law as discussed above, the Section\textsuperscript{110} would attract into its fold all branches of human knowledge requiring a course of special study, skill or experience and the word "expert" would embrace all persons having special knowledge or experience of a trade, handicraft or profession.\textsuperscript{111} However, the opinion must be deduced from a well-recognized professional or scientific principle or discovery, and the thing from which the deduction is made must be sufficiently established to have gained universal acceptance in the particular specialty in which it belongs. However, according to a celebrated authority of repute,\textsuperscript{112} as no formula exists by which laboratory scientists can match patterns and count lines in comparing spent bullets and cartridge casings, the field of firearms identification is therefore primarily a skill and a specialized branch of arts rather than of science.
The science of firearms identification is based on sound principles and is now well established in this country and commands the confidence of the even the higher judiciary. This further finds fortification in the Criminal Procedure Code, 1973 as reports of certain Government Scientific experts (includes a Ballistic Expert) may be used as evidence in any inquiry, trial or other proceedings under the Code. In what cases the examination of a ballistic expert is essential for the proof of the prosecution case, must naturally depend upon the circumstances of each case. In a tell-tale case, the High Court was unable to accept the testimony of the eye-witnesses. The case, without such testimony, rested on circumstantial evidence in which the conviction for murder was upheld with the observation that there was no ground for distrusting it and no room for thinking that any one else might have shot the deceased.

In a case of the Allahabad High Court Justice M.H. Beg observed that in judging whether a particular weapon is a firearm or not, the test is not whether that particular weapon is found to be serviceable at the time but whether it has lost its specific character and ceased to be a firearm. The standard relating to the "specific character" is not fixed and is a subjective one which is a subject of an expertised knowledge of a ballistic expert only. And so, the court will have to rely very heavily on the opinions of such experts to be satisfied that the weapon still possesses its specific character.
Thus, due weightage is to be given to the opinions of experts on forensic ballistics of long-standing, well-trained and experienced person when the critical problems of firearms identification and other problems regarding firearms such as aspect of suicide, homicide, range, wound, energy etc. are encountered by the Courts for ends of justice as the expert can only throw light on some matters of vital importance about which the statutes or Precedents are silent. There is no doubt that the science of firearms identification is based on firm principles and opinions furnished by an experienced expert can be relied without any risk of error for all practical purposes. It is heartening to note that this view has entrenched itself in India promising a very bright future for forensic ballistics in our country.
Foot-notes to Chapter V


8. (i) Peter R. D. Forest et al, supra note 1 at pp 399-411
(ii) Paul B. Weston et al, supra note 3 at pp 96-95
(iii) Dr. I. Bhooshana Rao, Shri M. Jamhari and Shri N. M. Supanekar, Firearms and Firearm Injuries, Intelligence Bureau (Ministry of Home Affairs), Govt. of India, 1965 at pp 39-40
(i) Journal of the Indian Academy of Forensic Sciences, Vol.12, No. 2 at pp 92-93


14. Sec. 121, The Indian Penal Code, 1860

15. Sec. 121A ibid

16. Sec. 122 ibid

17. Sec. 123 ibid

18. Sec. 125 ibid;

19. Sec. 126 ibid

20. Sec. 131 ibid

21. Sec. 132 ibid

22. Sec. 144 ibid

23. Sec. 148 ibid
24. Sec. 158 ibid
25. Sec. 209 ibid
26. Sec. 300 ibid
27. Sec. 301 ibid
28. Sec. 307 ibid
29. Sec. 308 ibid
30. Sec. 309 ibid
31. Sec. 324 ibid
32. Sec. 326 ibid
33. Sec. 390 ibid
34. Sec. 391 ibid
35. Sec. 394 ibid
36. Sec. 396 ibid
37. Sec. 397 ibid
38. Sec. 398 ibid
39. Sec. 399 ibid
40. Sec. 402 ibid
41. Sec. 459 ibid
42. Sec. 460 ibid
43. Supra chapter III
44. (i) R.v. Squires (1975), 25 C.C.C. (2d) 202 (Xf U! Prov.); vard 35 C.C.C. (2d) 325 (C.A.)


45. supra note 31

46. Sec. 323, The Indian Penal Code, 1860

47. supra note 32

48. Sec. 325, The Indian Penal Code, 1860

49. supra notes 37 and 38

50. (i) R.v. Mac Donald et al. (1973), 16 Crim. L.Q., 147 (Ont. C.i.)

(ii) R.v. Wallace (1973), 11 C.C.C. (2d) 95

(iii) R.v. Johnston (1976), 18 Crim. L.Q. 286 (Ont. C.i.)

51. Sec. 302, The Indian Penal Code, 1860

52. Sec. 303 ibid


54. supra notes 37 and 38


58. Journal of Criminal Law & Criminology, Vol. 73, No. 3, 1982 at pp 1051-1060

59. The Indian Arms Act, 1878

60. Khazan v. Emperor, 172 Ind Case 405; 39 Cr LJ 141 at p 142; AIR 1937 Lah 793

61. The Arms Act, 1959

62. ibid

63. Arjun Singh v. State, 1965(2) Cr LJ 668; AIR 1965 Punj. 443

64. Ganga Prasad v. Emperor, 34 Cr LJ 890 at p 891

65. AIR 1969 Orissa 23

66. AIR 1933 Oudh 470


68. Sec. 209, ibid

69. The Criminal Procedure Code, 1973

70. Sec. 41 ibid

71. Sec. 52 ibid

72. Sec. 106 ibid

73. Sec. 107 ibid
74. Sec. 109 ibid
75. Sec. 110 ibid
76. Sec. 129 ibid
77. Sec. 130 ibid
78. Sec. 144 ibid
79. Sec. 145 ibid
80. Sec. 146 ibid
81. Sec. 147 ibid
82. Sec. 149 ibid
83. Sec. 150 ibid
84. Sec. 151 ibid
85. Sec. 156 ibid
86. Secs. 218-224 ibid
87. Sec. 293 ibid
88. Sec. 320 ibid
89. Sec. 45, The Indian Evidence Act, 1872
90. Sec. 46, ibid
91. Sec. 56 ibid
92. Sec. 57 ibid
93. Sec. 101 ibid
94. Sec. 102 ibid
95. Sec. 105 ibid
96. Sec. 114 ibid
98. Captain Joe H. Munster and Captain Murl A. Larkin, Military Evidence, The Bobbs Merrill Company Inc. USA, 1959 at p. 11
99. U.S. v. Hurt (9 USCMA 735) 27 CMR 3
100. R.V. Taylor (1928) 21 Cr. APP.R. P.21
101. (i) State v. Williams, 179 N.W. 2d 756 (Iowa 1970)
    (ii) Ram Das v. State of Maharashtra (1977) 2 SCC 124:
    1976 SCC (Cri) 254
102. Supra at pp 1-2
103. Thomas J. Gardner, supra note 97 at pp 580-582
104. Folkes v. Chadd (1782) 3 Doug. K.B. 157
105. Bristow v. Sequeville (1850) 5 Exch. 275
106. Fryer v. Gathercole (1849) 4 Exch. 262
107. U.S. v. Adkins (5 USCMA 492) 18 CMR 116
108. Supra note 89

   AIR 1954 Andh. Pra. 39

110. Supra note 89

   Agra 2, 1968 at pp 6-7

112. Thomas J. Gardner, Supra note 97 at p 676

   Cr LJ 300= 1957 SCR 187= ILR (1957) 1 All 15

(ii) Tahsilder Singh v. State, AIR 1958 All 255= 1958 Cr LJ
   424 (DB)

   190= 1957 MPC 541= 1957 MPLJ 837 (DB)

(iv) Janak Singh v. The State of U.P. 1972 Cri LJ 1177(= AIR
   1972 S.C. 1853)

114. Supra note 87

115. Justice S.D. Singh (Rev. by), Sohoni's The code of Criminal
   Vol. III at pp 2566-2577.


117. Kalua v. State of U.P., supra note 113(1)
118. Swami Dayal v. State, 1953 All. 353 : 1953 Cr.LJ 762

